Textile World

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AR BONDS
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Sabotage in the Camouflage Corps

Microorganisms which cause damage to paint camouflaged surfaces are saboteurs of the first order. Regardless of the tenacity of these organisms, however, they can be satisfactorily controlled with Dowicide.

Exhaustive tests in numerous industrial fields have led to the development of 17 Dowicide products—all produced from chlorinated phenols. Textiles, paper and leather products — for example — also benefit from Dowicide applications. Because of their effectiveness in controlling the growth of microorganisms, Dowicides are performing invaluable service for industry. During these times when products are being shipped to the far corners of the earth and subjected to the most gruelling conditions, this extra protection is doubly desirable.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York • St. Louis • Chicago • Houston • San Francisco • Los Angeles • Seattle

PROTECTION FOR TEXTILES—Dowicides protect textiles against mildew and fungus growths. Incorporated in compositions for finishing, it provides an effective inhibiting action under widely varying atmospheric conditions—from arctic to tropical. This means longer life for all textiles. Write for full details.

DOWICIDE

GERMICIDES AND FUNGICIDES

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

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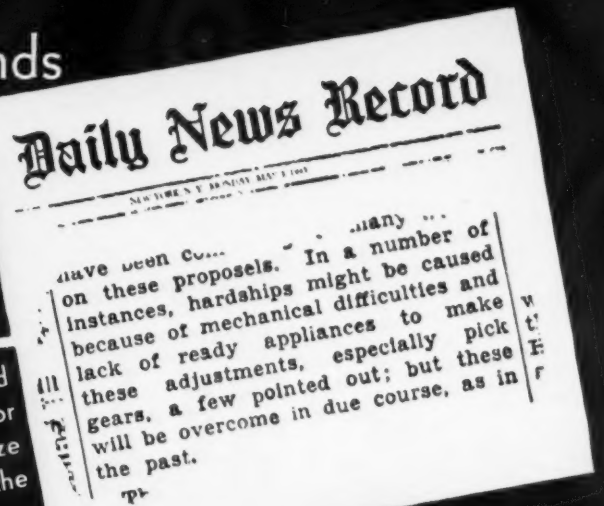
Subscriptions: United States and Possessions, and Latin American Republics, $1.00 a year, $2.00 for two years, $3.00 for three years. Canada, $2.00 a year, $3.00 for two years, $4.00 for three years. Great Britain and British Possessions 12 shillings for one year, 27 shillings for three years. All other Countries $2.00 for one year, $4.50 for three years. Entered as second-class matter August 25, 1936, at Post Office, Albany, N. Y. under the act of March 3, 1879. Printed in U. S. A. Twenty-five cents per copy.

We Are Geared to Wartime Demands

Getting Out 20,000 Pick Gears on a Sudden Rush of War Orders Did Not Stump Our Shops

Our Government recently decided it could increase the production of textiles for urgent military needs by increasing the size of warp and filling yarns and reducing the count to give goods the same weight.



Daily News Record

...have been co... ...many ...
on these proposals. In a number of instances, hardships might be caused because of mechanical difficulties and lack of ready appliances to make these adjustments, especially pick gears, a few pointed out; but these will be overcome in due course, as in the past.

At the time this decision was made, some of those present at the conference doubted the possibility of obtaining, within a reasonably short time, the vast supply of Loom Parts this change would require. The Daily News Record's reporter referred to this and cited Pick Gears in particular.

Although

As a result of this decision, we received orders for Over 20,000 Pick Gears—all within a few days, and

Although

These are double gears—with gear and pinion—and nearly all of them had cut teeth,

There was no difficulty to be "overcome in due course."

We shipped the great part of these gears Within One or Two Days, and the Entire Lot was out Within a Week.

You Can Depend Upon Us to Meet
Your Needs for Loom Parts to Keep
Your War-busy Looms Running

DRAPER CORPORATION

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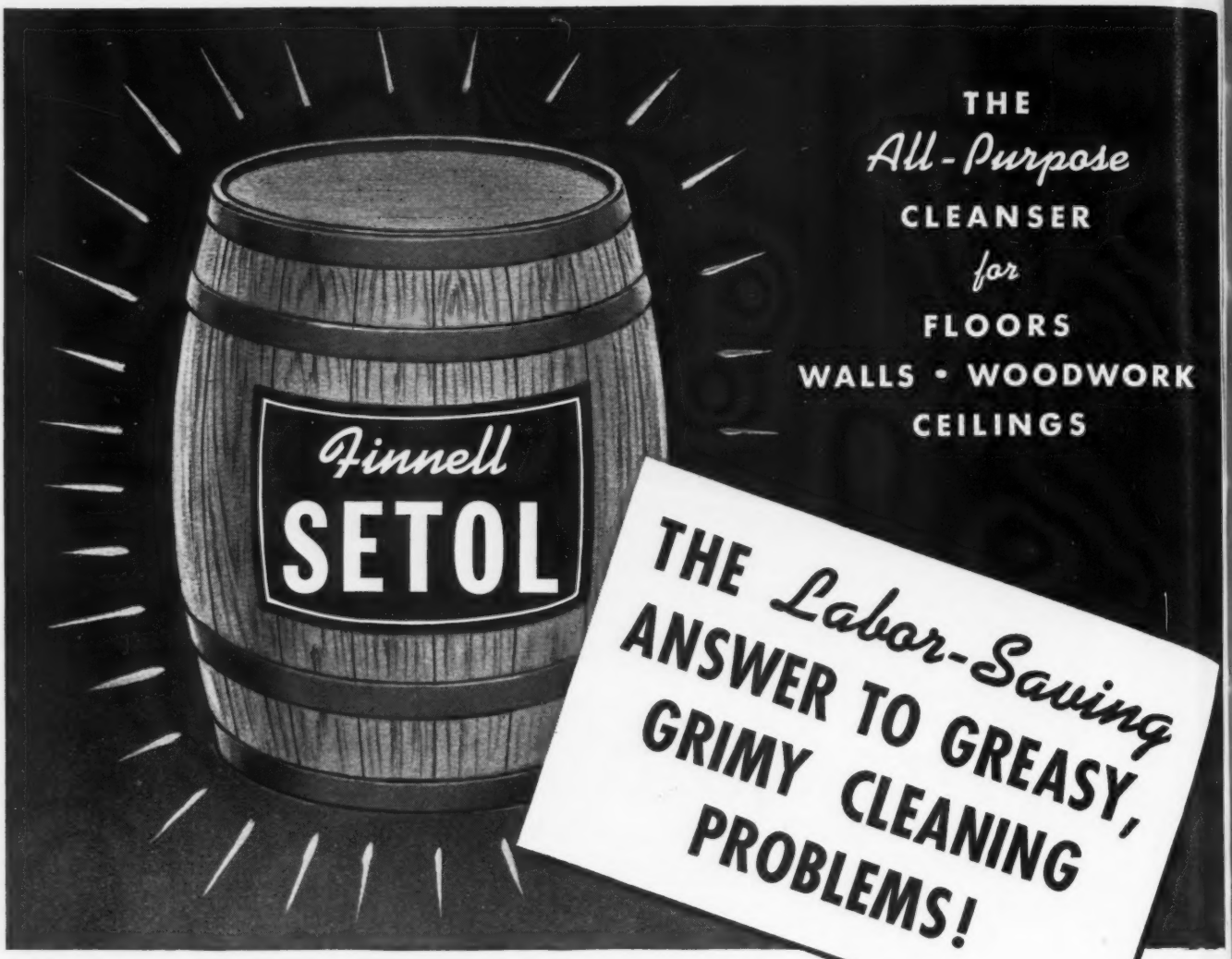

Amazingly Fast . . . Safe . . . Thorough

Setol is an oil emulsifier—*it breaks down oils*—hence the speed with which it penetrates and removes stubborn coatings of grimy oil and grease.

Though best known for its wonderful cleansing action on hard-to-clean mill and factory floors, *Setol* has proved equally effective for cleaning heavily soiled painted walls and ceilings. It's thoroughly safe . . . free from harmful properties that *clean away* the finish and discourage repeated cleaning. *Setol-cleaned surfaces save frequent redecorating!*— a timely consideration. In man-hour savings, this *multiple-purpose product* pays for itself many times over.

Setol is both soluble and sudsless. And as a cleanser for use in scrubbing machines on mill and factory floors, it surpasses all other types. Compounded in *Finnell's* own powder mill, and sold in barrels, half-barrels, and quarter-barrels.

For literature or consultation, phone or write nearest *Finnell* branch or Finnell System, Inc., 1907 East Street, Elkhart, Indiana.

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The 600 Series Finnell scrubs, waxes, polishes, steel-wools, sands, grinds. 5 sizes. Equipped with *Feather-Touch* Safety Switch. Available to essential users qualifying on Application Form PD-722.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

rub your desk . . .

meet Enemy No. 1

Rub your thumb along your desk—*fast, hard!* . . . Feel the resistance—the heat? When you fight a mechanized war, *that's* the *first* enemy you have to lick—*friction!* . . . *Everywhere* the fight against friction is waged *without let-up.* It is a fight that *must be won* before we can even get at our enemies! . . . Perhaps no other single item plays so vital a part in the kind of war we fight today as the ball bearing. Without it, not a wheel would *keep* rolling—not a ship would *keep* sailing—not a plane would *keep* flying. New Departure ball bearings are helping to keep America's war machine rolling, sailing, flying on to victory.

NEW DEPARTURE - DIVISION OF GENERAL MOTORS - BRISTOL, CONNECTICUT

Nothing rolls like a ball

New Departure

THE FORGED STEEL BEARING

3179

RESEARCH

Comments by Henry G. Lord

Forty or more years ago an elderly man came into my Boston office one day and expressed the desire to talk to me confidentially. He said he was a druggist in Great Falls (now Somersworth), N. H., and that he had been in business there all his life. He looked just like the kindly old New England druggist who knew everybody and whom everybody liked.

He told me that a man whom he knew and who had worked in the cotton mill, had come to him some ten years ago with a great idea; that this man had taken him over to the mill, into the department where women were laboriously drawing the warp threads through the eyes of the heddle, just as they had been doing it since weaving was first practiced. It always had been taken for granted that this was a hand process which could not be done by machine. Now this man had an idea that it could and he wanted help to develop it. My druggist friend was sold on the idea and fitted up a place in his barn where the inventor could carry on his experiments.

After ten years or more of financing the inventor, my visitor was reaching the end of his resources. He told me that the machine had been on the verge of perfection many times, but something always went wrong at the last moment. But now he felt they had finally accomplished it and he wanted me to go down to Great Falls and see the machine perform.

So I went to Great Falls. They started up the machine and to my astonishment it selected and drew in the threads . . . . for about three-fourths of the warp . . . . then it stopped, and all attempts to finish the warp failed. The principle seemed to be all right, but some of the details of operation needed smoothing up. But I was convinced then that drawing in by machine was practical; and of course it has long since been a successful operation.

When I read about research, the memory of this enterprising old druggist and his persistent determination to build a warp-drawing-in machine comes to my mind.

I don't suppose that his efforts, strictly speaking, would fall under the head of research. As I understand it, there are two kinds of research —applied research and fundamental or pure research. Applied research has a definite objective, either to improve a machine or process or to overcome a recognized lack of means for accomplishing the desired result. Fundamental research starts from scratch, without any preconceived ideas, and through study and experiment aims to develop new products, new processes, new methods which are not necessarily the definite objective at the start.

Most of the older generation have associated fundamental research with the newer industries —chemical, electrical and automotive. Applied research, although we didn't call it that, has always been an accompaniment of human progress; thoughtful and inventive men always have been striving for better ways to do things.

The older the industry or art, the more people were familiar with the old ways of doing things and were satisfied to continue along the old established lines. That was the trouble with the textile industry for a good many years.

But this generation of textile machinery men and textile mill men is not satisfied to continue along the old lines. It recognizes that the textile manufacturing processes must keep pace with the wonderful development in other branches of science and industry. The manufacture of textiles will not be immune from these revolutionary changes. Every machinery and equipment builder must be studying these problems as applied to his own product. I believe they are doing it and, after the war is over, I look to see many important developments in machinery and processes brought to light. That will be of vital consequence to mill men.

Surely the textile industry is "on its toes" as never before.

HENRY G. LORD, ***Vice-President of McGraw-Hill Publishing Co. and Founder of Textile World***

SUN LUBRICANT

... proves best of seven in reducing wear ... and maintenance

Wear ... tear ... and maintenance are the three big items every mill superintendent must keep at a minimum with today's production schedules. Equipment must be made to produce more and last longer than ever before. And here's how one mill achieved both!

Seven different competitive lubricants had been tested on frame gears and cams without success. Then the mill superintendent applied Sun No. 897 Adhesive Pressure Grease! And here's what he had to say about the results:

> "This grease clings to the surface being lubricated, does not drop to the floor or get upon the work and cause stains. We notice, too, that when the grease was applied the frames ran more silently than ever before. Our wear and tear, as well as maintenance, is thereby reduced. We have to lubricate less frequently than with any of seven products we had used over the years."

It's experiences just like this one that are making the leading textile mills throughout America standardize on Sun Lubricants and Sun Service. Whatever your problem — lubricating or processing — Sun's Textile Engineers stand ready ... willing ... and able to help you improve your production and conserve your equipment. Their services are yours to use. Write ...

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SUNOCO

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Post-war fabrics will contain many new fibres from strange and unusual sources. Palco from the redwood forests of the Pacific Coast will be found in blankets, mackinaws and felts. Our Research and Engineering Staff have foreseen these many changes and are planning processes and equipment to convert these basic materials into beautiful and useful fabrics.

Now is the time to plan your "Saco-Lowell-izing Program"* to assure future profits and prosperity for your mill.

*SACO-LOWELL-IZE . . . **1.** To utilize floor space so as to achieve the ideal in continuity of production. **2.** To coordinate all successive steps in processing. **3.** To reduce waste, spoilage and useless transportation of stock. **4.** To attain the greatest economy in maintenance and operation costs.

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"MORE GRIP-LESS SLIP"

—Houghton leather belts are treaded for the same reason

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Houghton's

VIM TRED LEATHER BELT

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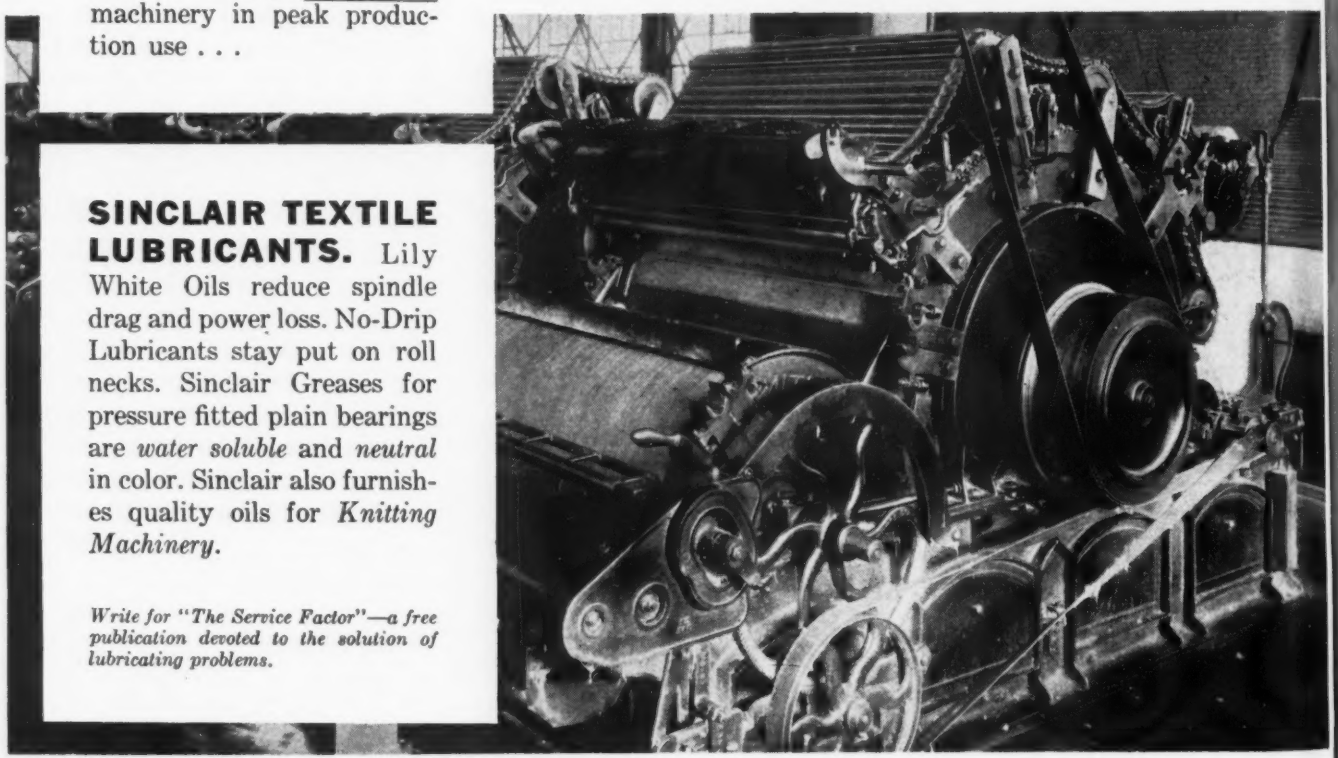
BIG PUSH ABROAD needs all-out support at home. To keep *TEXTILE* machinery in peak production use . . .



SINCLAIR TEXTILE LUBRICANTS. Lily White Oils reduce spindle drag and power loss. No-Drip Lubricants stay put on roll necks. Sinclair Greases for pressure fitted plain bearings are *water soluble* and *neutral* in color. Sinclair also furnishes quality oils for *Knitting Machinery.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

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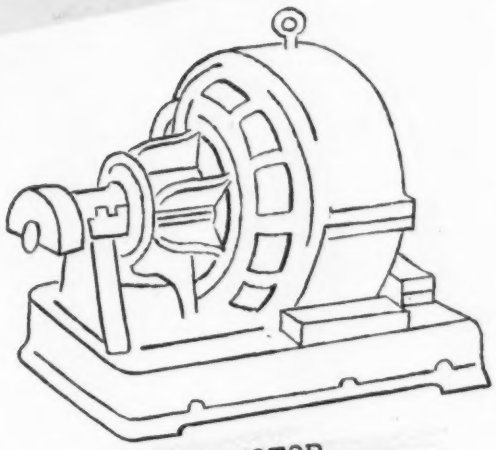

to replace broken motor-shaft in one day's time

SHAFT ON 35 HP MOTOR SNAPPED AT 4:00 P.M. FRIDAY. MOTOR RECEIVED AT WESTINGHOUSE DISTRICT MANUFACTURING AND REPAIR PLANT 11:00 A.M. SATURDAY. STEEL FOR NEW SHAFT COULD NOT BE DELIVERED PROMPTLY. SEARCHED SALVAGE AND MACHINED LARGER MOTOR-SHAFT TO CORRECT DIMENSIONS. MOTOR ASSEMBLED AND SHOVEL OPERATING AT 4:00 P.M. SUNDAY.

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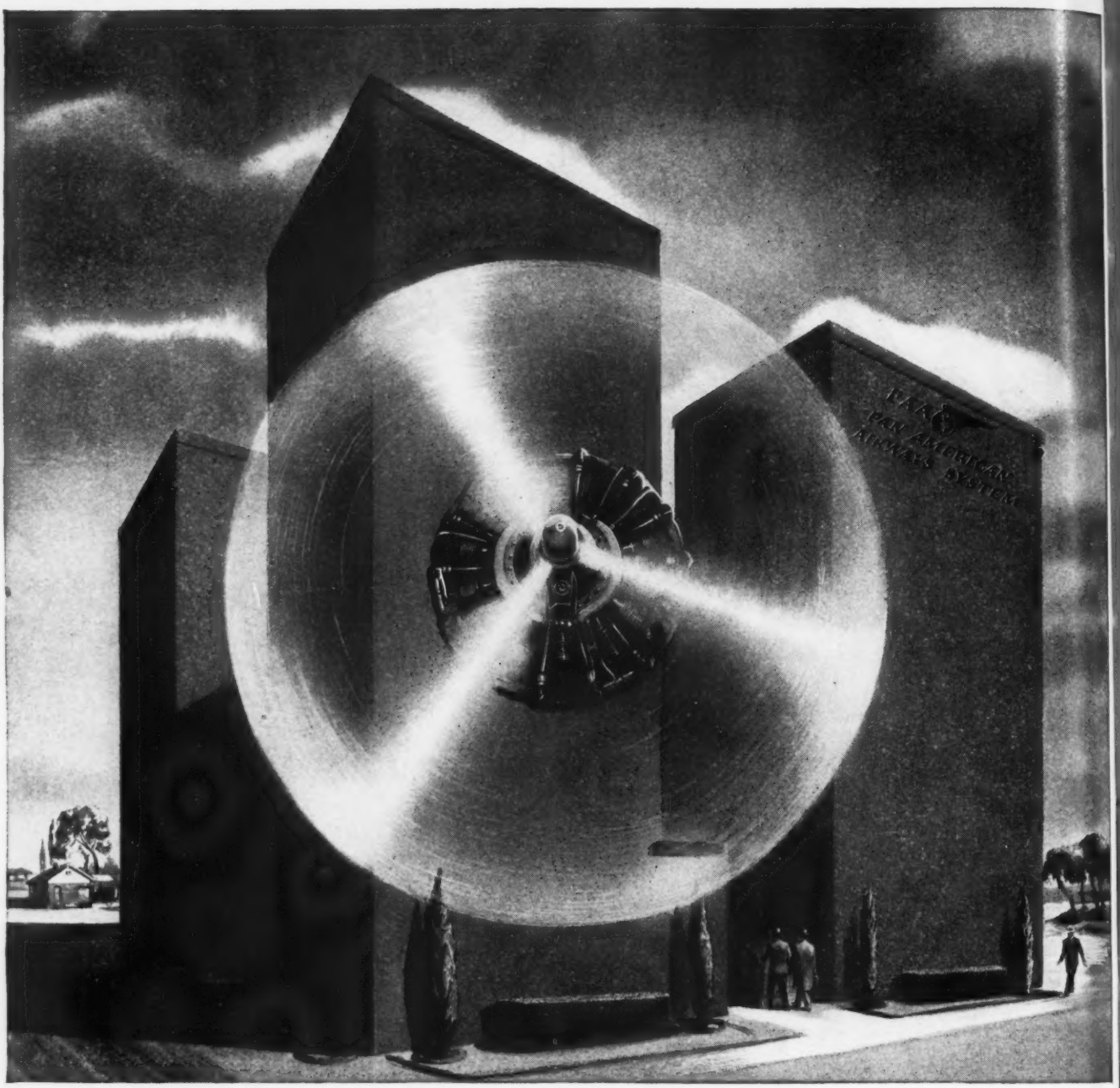
33 M & R PLANTS . . . ONE NEAR YOU!



Cave-of-the-Winds in Miami

Inside this unique building, the engines of Pan American Clippers are put through their paces. Propellers roar with the thunder of 4000 horsepower —creating super-hurricanes as air is pulled down one set of stacks and pushed out through the other set.

Outside, there's hardly a sound—for in each stack a honeycombed unit of cells soaks up the resonance, bit by bit, until it is finally dissipated.

Naturally, this completely windowless test house had to be air conditioned—to remove heat generated by the engines, to provide controlled testing temperatures, to make working conditions bearable for the engineers. As in so many other exacting applications of air conditioning and industrial refrigeration, the equipment selected was General Electric.

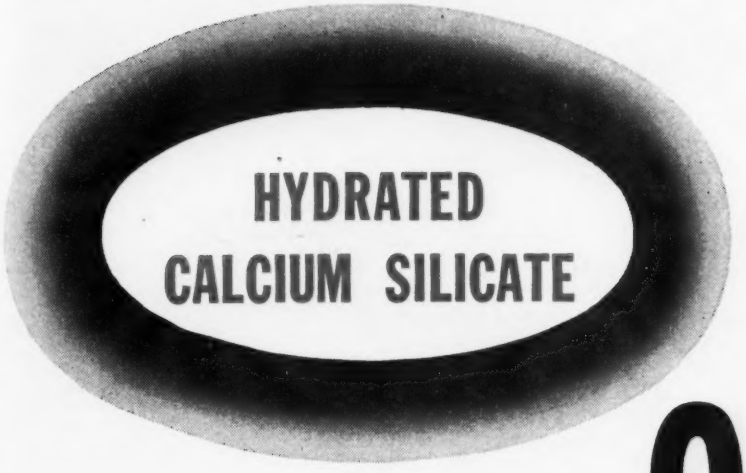
Today, G-E air conditioning and refrigeration engineers are devoting all their talents to problems of war production and testing. They are learning much that will lead to better, more economical manufacturing methods—to healthier, happier living—when we return to the pursuits of peace.

Air Conditioning and Commercial Refrigeration Division, Section 437, General Electric Company, Bloomfield, New Jersey.

Air Conditioning by

GENERAL ELECTRIC

Can you use this new pigment?



Silene*

Blood Plasma Saves Lives—
Have You Contributed?

*Another Columbia Chemical

WHAT SILENE IS: SILENE is a new chemical pigment—a white, finely divided, precipitated, hydrated calcium silicate, with the following approximate analysis:

CaO	19.0
SiO_2	67.0
Loss on Ignition	14.0

pH in water suspension	10.1
Specific Gravity	2.10
Bulk Density	15 to 16 lb. per cu. ft.
Refractive Index	1.475

CHARACTERISTICS OF SILENE: SILENE is composed of very fine particles present in the form of small, highly friable agglomerates that are readily dispersed in the course of milling into rubber, paint, or vehicles. SILENE also can be redispersed in water.

PRESENT USES: SILENE has had rapid acceptance as a rubber pigment with outstanding results. It confers high modulus, hardness, tear resistance, and good tensile strength up to high loadings. SILENE has also found specialized use in the paint, and paper fields.

OTHER USES: Indications are that SILENE will make an important contribution in compounding a number of new rubber substitutes. Favorable preliminary tests of SILENE are being checked on a more extensive scale for use in protective coatings, plastics, cosmetics, dentifrices, ceramics, cloth coating, as a base for printing inks and color lakes, and as a filter aid.

Perhaps you can use this new Columbia product—SILENE—in your operations. Samples of SILENE will be furnished upon request, or one of our Technical Service representatives will call.

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SODA BRIQUETTES · MODIFIED SODAS · CAUSTIC ASH · PHOSFLAKE · CALCENE** · CALCIUM HYPOCHLORITE

*Hydrated Calcium Silicate **Precipitated Calcium Carbonate

PITTSBURGH PLATE GLASS COMPANY
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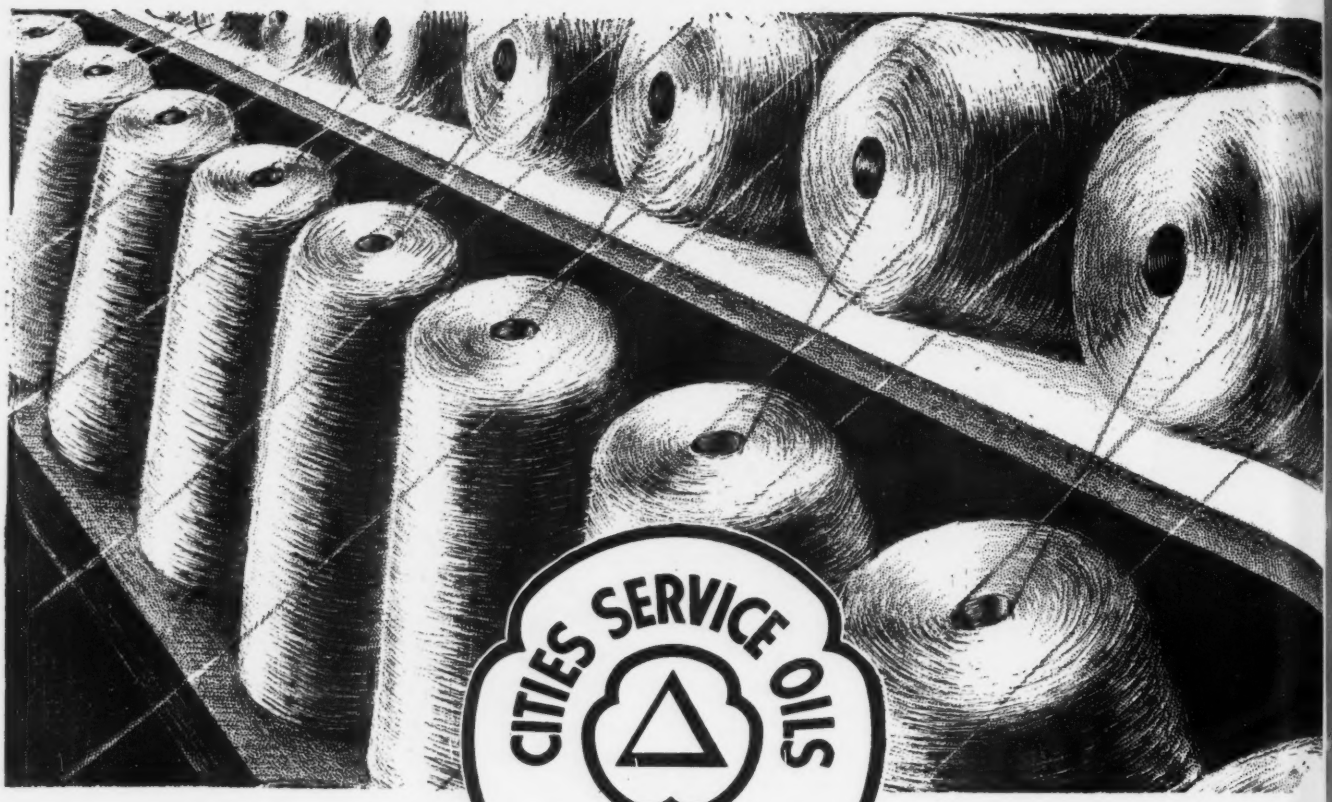

Now More Than Ever The Symbol of Service

Almost every year, new designs, new improvements—*and new lubrication problems, too*, arise in the textile industry.

To solve these new lubrication problems promptly and efficiently each year, Cities Service Lubrication engineers have worked closely with mill operators—and have developed, in many cases, special lubricants to meet the challenge these new problems presented.

That is why today, whether your work calls for conventional or special lubricants, Cities Service is prepared to serve you. Through its wide experience with all lubrication problems in the textile industry, Cities Service can supply you with top quality, precision-made products for *every* department of your mill—oils and greases that will stay in the bearings—reduce leakage and fabric staining—lower friction drag—and step-up production.

It will pay you to learn more about our products, and our service. For an actual demonstration in your own mill, write to our nearest Cities Service Office.

OIL IS AMMUNITION—USE IT WISELY!

CITIES SERVICE OIL COMPANY
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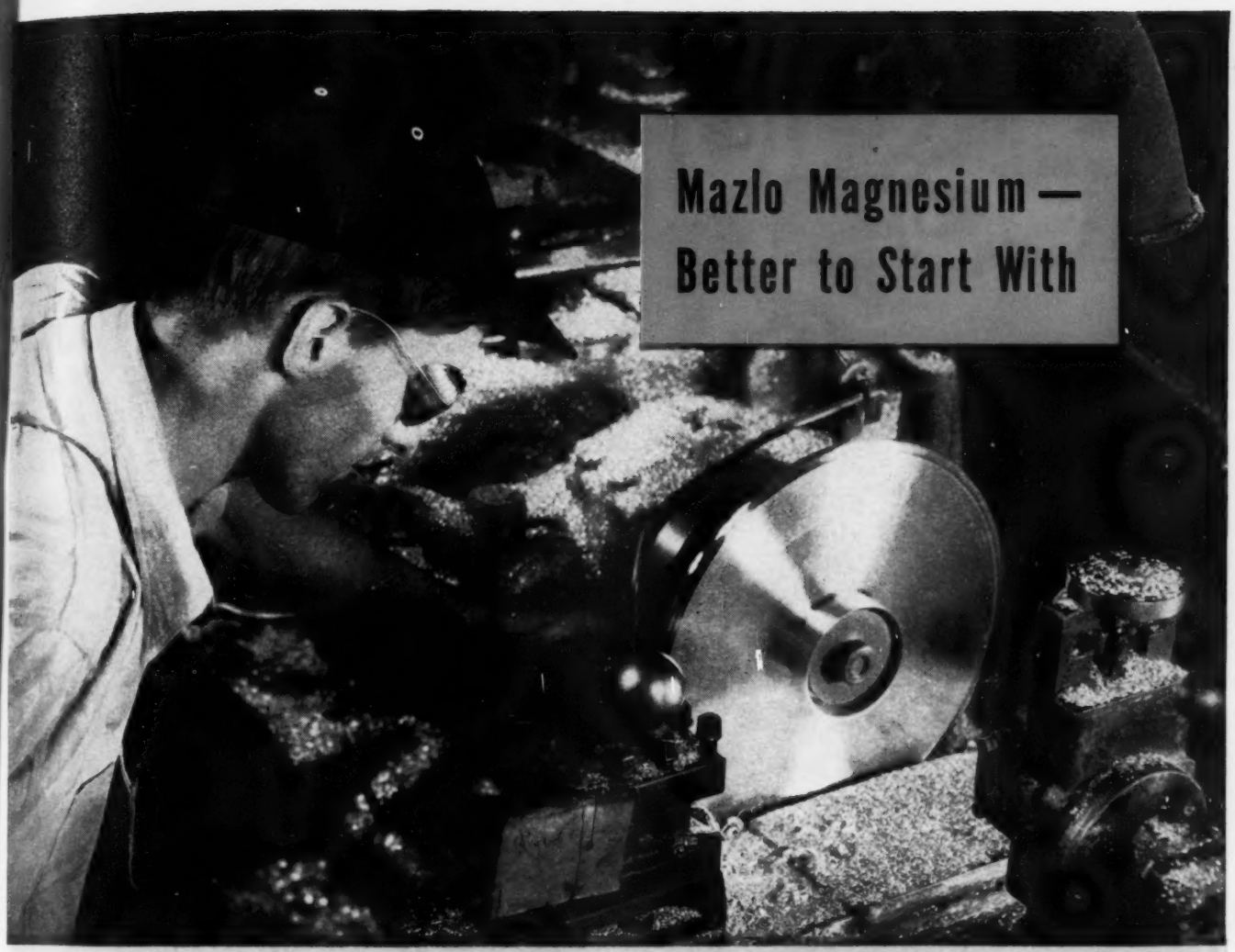

To the natural advantages of magnesium, Mazlo Magnesium products add their own superior qualities . . .

Magnesium is *super,* when it comes to machinability. It cuts at high speeds and feeds, taking a fine finish. Part costs are consequently lower, especially so where machine tools can be run at speeds which take full advantage of this property of magnesium.

In Mazlo Magnesium products supplied by American Magnesium Corporation, you can expect greater accuracy, uniformity and finer details. Credit this to skill in manufacturing gained in more than twenty years of working with magnesium. This may mean less allowance needed for finishing, less metal to remove, lower machining losses, when you put Mazlo Magnesium products through your plant.

In addition, remember in working with magnesium to translate the per-pound cost into what it costs per-piece. Magnesium weighs less than one-fourth as much as the heavy metals. You'll discover, therefore, that this lightweight metal permits new economies, if you've been in the habit of figuring costs on a weight basis.

Today, of course, you can't get Mazlo Magnesium products for civilian uses. But be planning to profit by its higher strength-weight ratio in making your postwar designs. Sales Agent: Aluminum Company of America, 1705 Gulf Building, Pittsburgh, Pa.

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AMERICAN MAGNESIUM
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SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

Automatic cleaning over spinning

Cleaner over high speed twisters.

Preventing lint accumulation on high speed winders.

CONTROLLED CYCLONIC CLEANING

Cures the Headaches

IN LONG DRAFT SPINNING

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Lint accumulation is eliminated with Overhead Automatic Cleaners. Automatic cleaning with swirling currents of air, carefully directed, removes lint before it can accumulate. Such cleaning keeps machines producing full time . . . enables operators to increase their output . . . and helps you to meet the war demands with MORE and CLEANER yarn.

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THE AMERICAN MONORAIL CO.

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ONE OF A SERIES OF SUGGESTIONS TO AID PRODUCTION

ONE OF A SERIES OF SUGGESTIONS TO AID PRODUCTION

HOW TO SOLVE

Operating Problems with *Correct Lubrication*

Prepare them for 3 Shifts!

WHEN YOU CHANGED from one shift to three, you began crowding *3 years of wear* into one calendar year of operation!

You've got to *condition* your machines for full-time operation. You can't expect them to stand the gaff with "good enough" lubricants.

On such important production units as geared motors make sure you are using a Gargoyle Vacuoline Oil.

This member of the famous Gargoyle "family" has the chemical stability to stand up under "round-the-clock" operation. This means... freedom from emulsions and sludge... long oil life... and long, trouble-free gear life, too!

In fact, Gargoyle Vacuoline Oil is ideal for enclosed circulation-oiled and splash-oiled gears. Forty-eight hours a week—or 168 hours—this oil will provide dependable lubrication.

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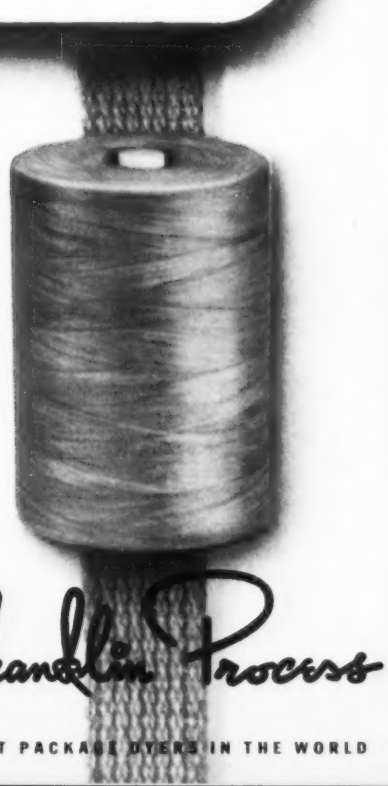
FRANKLIN PROCESS; *Custom Yarn Dyers — Colored Yarns;* Providence, Philadelphia, Greenville, Chattanooga; New York Representative, 40 Worth Street; Chicago Representative, 100 West Monroe Street.



Franklin Process

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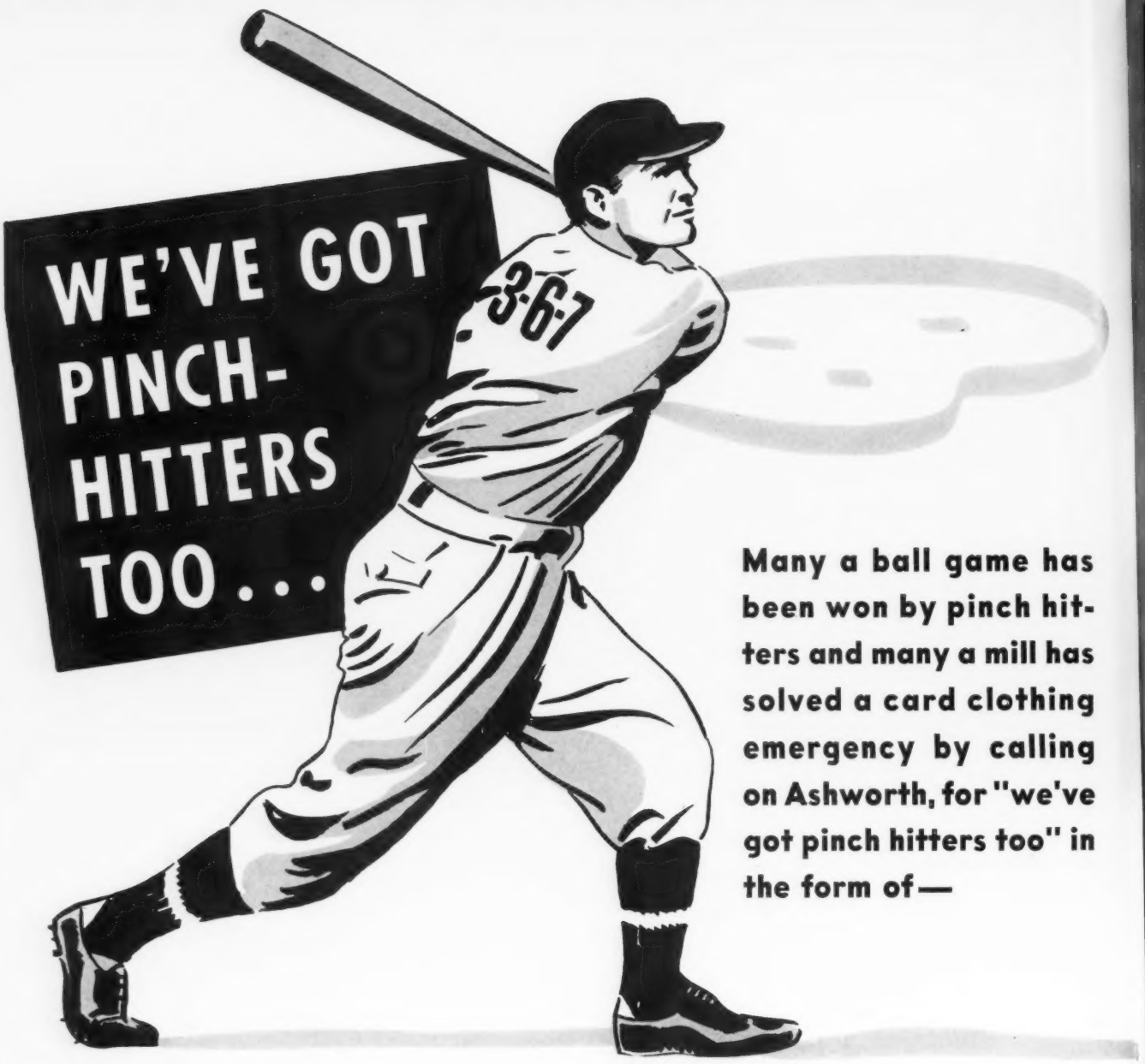

Many a ball game has been won by pinch hitters and many a mill has solved a card clothing emergency by calling on Ashworth, for "we've got pinch hitters too" in the form of—

3 FACTORIES which assure an uninterrupted supply of card clothing. If one factory is temporarily disabled, another factory can "pinch hit" for it.

6 REPAIR SHOPS which facilitate convenient and prompt repairs and which again insure you against emergencies.

7 DISTRIBUTING POINTS which speed up deliveries of those items we have in stock and facilitate personal contacts when the mill has card clothing problems.

Look to us not only in an emergency but also for dependable year round service. Remember we're "pioneers in card clothing", which is your guarantee of quality.

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***Woolen Div.*, AMERICAN CARD CLOTHING CO.**

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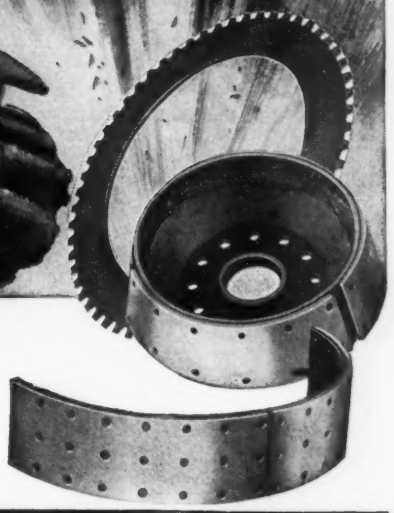
Where breakdowns are costly...

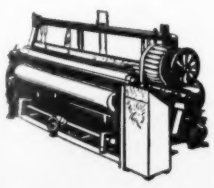
VELVETOUCH *delivers the goods*

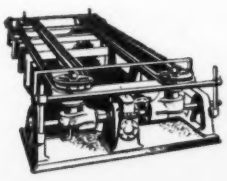


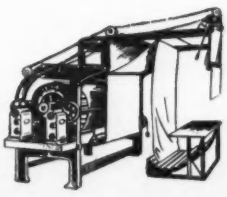
VELVETOUCH is proving its dependability on America's far-flung battle fronts. This remarkable all-metal friction material stands up under the tremendous heat and pressure in the transmissions in U. S. Army tanks, making possible the smooth and positive clutch action that leads to quick certain victory.

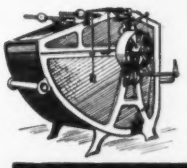
In your plant, too, you will find that Velvetouch clutch facings and brake linings prevent costly break-downs. Velvetouch wears 3 to 7 times longer than ordinary friction materials . . . requires fewer adjustments . . . speeds up production.

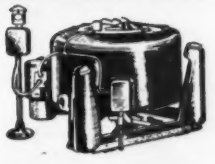
Specify Velvetouch for your roving frames, and for other machinery where you require brakes and clutches that never grab, chatter or slip!











TRADE MARK REG U S PAT OFF.

Velvetouch

THE S. K. WELLMAN CO.

1374 EAST 51ST STREET
CLEVELAND, OHIO, U.S.A.

PIONEERS IN PUTTING POWDER METALLURGY TO WORK FOR INDUSTRY

The ILL-WIND that's blowing some good...

OUT OF the cauldrons of war will one day come the works of peace, improved and renewed by their baptism of fire. "Continuous Process" Rayon Yarn, Industrial's great contribution to rayon progress, is one such product. Ideally suited to war needs because of its unexampled uniformity and virtual freedom from knots and broken filaments, this yarn, in parachutes, is dropping bombs on the enemy; as wire covering, it is insulating the hearts of submarines and destroyers; in tires, it will keep bombers and half-tracks and gun carriers rolling.

Once victory is ours, and rayon can return to the ways of peace, all that we have learned about this superior yarn and its characteristics, will be yours—to enjoy in new fabrics, new weaves, new textures and textiles. In beauty, durability, uniformity, they will surpass everything that has gone before.

Meantime, Industrial's famous Spun-lo Knit Cloth for Undies, and as much of Industrial's quality yarns as can be spared from the works of war, are serving to keep up the morale of the army on the home front by supplying wearables for workers, and clothing for civilian needs.

Industrial
RAYON CORPORATION
CLEVELAND, OHIO
NEW YORK OFFICE 500 FIFTH AVE.

Manufacturers of "CONTINUOUS PROCESS" RAYON YARN and Spun-lo* KNIT RAYON CLOTH

*Reg. U. S. Pat. Off.

HOW YOU CAN INSURE MAXIMUM TENSILE STRENGTH OF WOOL FIBERS

USE LEVANA IN THE DYE BATH

Soldiers, sailors, marines are tough on equipment. Think of the "wear and tear" your government woolens must undergo in the service of the armed forces! To insure *maximum* strength — add Levana to the dye bath. This *original* Sandoz formula protects wool fibers against the action of alkalies . . . steps up the tensile strength of the finished fabric!

Levana prevents felting and shrinking . . . preserves the "soft hand" of fine woolens. Economical and easy to use . . . Levana is readily soluble in water. Long used by leading textile mills, today Levana is in greater demand than ever — when military requirements call for greater wear and durability in every yard of government goods.

IMPORTANT NOTICE!

DYERS OF RAW STOCK

✓ Levana improves weaving efficiency

Insures highest tensile strength

DYERS OF YARNS and PIECE GOODS

✓ Levana improves level dyeing

Insures tensile strength

Prevents felting and shrinking

Only Sandoz Makes Levana

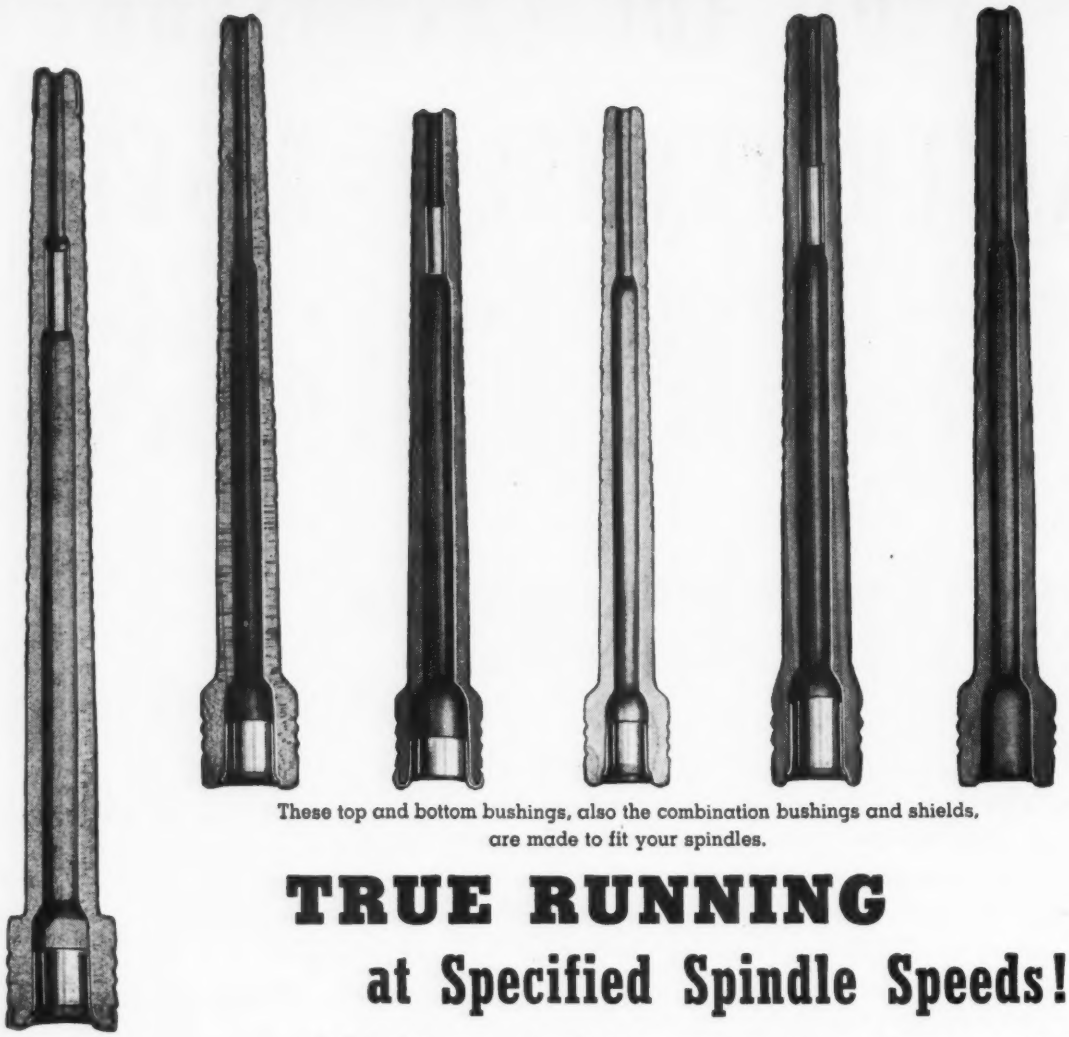
Write today for a WORKING SAMPLE OF LEVANA. Also ask for Catalog No. 33-A. Or — if you have a specific problem that calls for "on-the-spot" action — Sandoz technicians are available to visit your mill. They are in a position to benefit you by the experience gained in years of plant work.

SANDOZ

SANDOZ CHEMICAL WORKS, INC., 61-63 Van Dam Street, New York, N. Y.

BOSTON, MASS. • CHARLOTTE, N. C. • PATERSON, N. J. • PHILADELPHIA, PA. • PROVIDENCE, R. I. • CHICAGO, ILL. • LOS ANGELES, CALIF.

U S AUTOMATIC LOOM BOBBINS!



These top and bottom bushings, also the combination bushings and shields, are made to fit your spindles.

TRUE RUNNING
at Specified Spindle Speeds!

With U S "split" stock the turning follows the grain. Makes stronger, smoother, better balanced, truer running, longer lasting bobbins.

U S Bobbins are built to exact specifications and machinery maker's standards, for true running vibrationless operation – for perfect winding at specified spindle speeds – for accurate, automatic positioning in the shuttle, firm hold, free runoff and dependable release.

Originators of automatic loom bobbins, U S Bobbin & Shuttle Co. uses only straight grained "split" stock in the manufacture of its bobbins. They are conditioned and finished, inside and out, to resist distortion from heat and humidity. Tested on the customer's spindles, at the mill's own spindle speeds, they are guaranteed to run commercially true and be true to gauge – your best assurance of trouble-proof operation and well woven cloth.

Ask our technically trained, mill experienced U S Representative for help in licking operating troubles. The complete line of U S Textile Accessories – Bobbins, Shuttles, Spools, Cones, Rolls, Tubes and other items – have helped set new records for many mills.

THE SEAL OF QUALITY AND SERVICE SINCE 1857 — US

U S WHY NO. 2 Watch for more U S WHYS in these pages

U S BOBBIN & SHUTTLE CO.

LAWRENCE, MASS.

PROVIDENCE, R. I. JOHNSON CITY, TENN. GREENVILLE, S. C. CHARLOTTE, N. C.

CHICAGO AGENT: Albert R. Breen, 20 E. Jackson Blvd. CANADIAN AGENT: W. J. Westaway, Montreal

ALABAMA AGENT: Young & Vann Supply Co., Birmingham

THE SORRY PLIGHT OF THE MAN WHO WAITED TOO LONG TO MAKE POST-WAR PLANS

A 3-POINT *"Peace Program"* for Textile Manufacturers...

1 Make your post-war plans NOW

don't let peace catch you without definite plans for products, markets, sales and production.

2 Decide on new equipment needs NOW

don't wait until the war is over before making a thorough survey of your production equipment and deciding what machines must be replaced.

3 Order your new equipment NOW

don't risk serious delay in securing necessary new equipment for post-war production. Metals and other basic materials will continue to be scarce for a long time after the war ends.

If you are going to need new dyeing and finishing equipment after the war, we earnestly recommend that you place your order with us *now*. Our "Post-war Purchase Plan" assures you prompt delivery when war restrictions are lifted. Write *now* for complete details of this plan.

There are still lots of business men who can't see the wisdom of making post-war plans *now*. We hear these men say, "I'll wait until the end of the war is in sight. That's time enough to make plans for peace-time business."

One of the fallacies of this reasoning is that *nobody* can predict when the war will end. It might come sooner than you think. And the manufacturer who lets peace catch him unprepared . . . who has made no plans to bring out new or improved products . . . to capture new markets or reestablish old ones . . . *to replace worn or obsolete equipment* . . . *to "put his house in order"* . . . will have a terrific handicap in the race for profitable business against farther-sighted, better-prepared competitors. May we suggest that you adopt this 3-point "peace program"?

SMITH, DRUM & CO. • Allegheny Ave. at 5th St., Phila., Pa.

SMITH-DRUM TEXTILE MACHINES

for hosiery dyeing, skein dyeing, package dyeing, beam dyeing, piece goods dyeing, package drying, skein mercerizing, warp mercerizing, hosiery inspection.

SMITH-DRUM MACHINES Have Always Been a Long Step Ahead . . . In Design, Performance and Sales

*ARALAC

the man-made protein fibre is meeting the test of consumer acceptance with flying colors

Within the past year an extensive variety of ARALAC items have been offered the buying public by the nation's retail stores. They have sold—and they have kept selling. America approves ARALAC—and looks with increasing interest for the ARALAC tag on new fabrics and clothing. For full details write to

★T. M. Reg. U. S. Pat. Off.

ARALAC, INC.

230 Park Avenue, New York City

ARALAC, INC., a division of NATIONAL DAIRY PRODUCTS CORPORATION, represents but one of the many contributions this nation-wide organization is making toward the more efficient utilization of America's agricultural resources.

Daycos

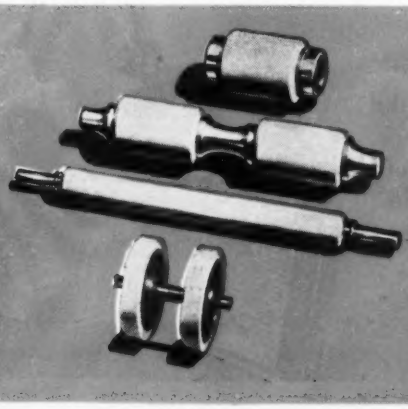
are Time-Tried and Mill-Proved

You can depend on Dayco Synthetic Roll Coverings for *more* uniform yarn at lower cost per month-of-use — because they are time-tried veterans of mill service since 1938. Furthermore, only Daycos are backed by years of hard won "know-how" in the development of synthetic rubber products for industry.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO . . . . . WAYNESVILLE, N. C.
Originators and Pioneers of Synthetic Rubber Products Since 1934
MAIN SALES OFFICE: Woodside Bldg., Greenville, S. C.

DEPEND ON DAYCOS FOR THESE 12 OUTSTANDING FEATURES

1. Improved drafting.
2. No grooving— less ends down.
3. Unaffected by temperature changes.
4. Lower net roll costs.
5. Long service life.
6. Easy to apply.
7. Proper cushioning.
8. Not affected by hard ends.
9. Static free.
10. Oil resisting.
11. One-piece tubular construction.
12. Produce more uniform yarn.



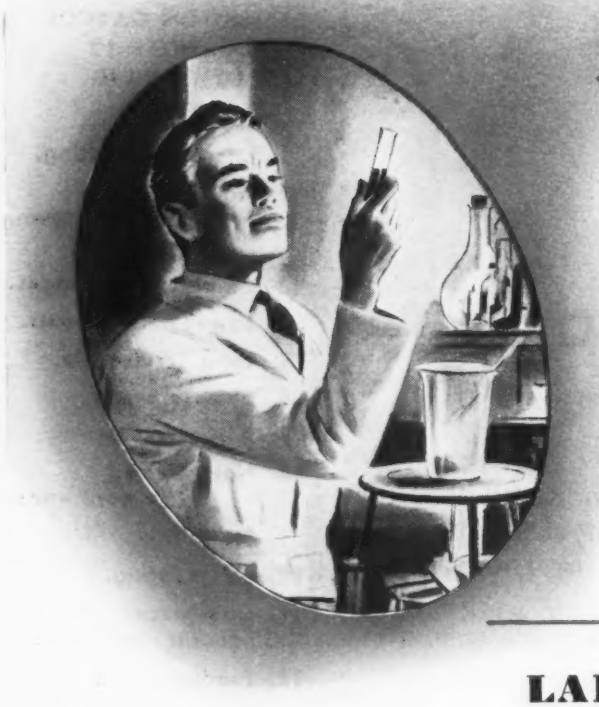
Dayco*
SYNTHETIC
Roll Coverings
A THOROBRED* PRODUCT BY DAYTON
* Reg. Trade Mark, The Dayton Rubber Mfg. Co.

THE TUBIZE TESTING and its Supporting

Early in 1934, Tubize set forth a new philosophy of responsibility, and a new program of Testing, Labeling and Advertising... a new sales and advertising service. It was a simple, practical answer to the growing consumer demand for the facts about wearing apparel fabrics made of Rayon Yarn... what they were made of; how they would wear; how to care for them.

Refined by experience; of new and greater usefulness in a war economy... the basic simplicity of the Tubize program has not changed. We will accept for testing any fabric made of Tubize Rayon... will identify with the Tubize Certified Quality Label fabrics that are proved satisfactory as to cleanability, color and wear... and will include on the label definite directions as to how best to clean and care for the labeled dress or lingerie.

Here is a sales and service program that works... that has proved its value through a decade of successful merchandising.



TESTING

FABRICS MADE of Tubize Rayon are tested by the United States Testing Company so that you and your customers can know just what to expect of them.

These tests establish the facts women want to know about the fabrics they buy... what wear to expect ... how they wash or dry clean... how the colors stand up... special hints for care. In other words, we substitute for guesswork the scientific findings of the laboratory—a service that you can use to great advantage.

LABELING

THE TUBIZE Certified Quality Label puts the whole weight of Tubize Testing and Advertising to work for you... it is a certification of the serviceability of every garment that carries it; a reliable guide to the proper care of that garment.

Now, as war conditions are putting added strains on shortened sales forces, the value of the Tubize Label is greater than ever... it is an automatic assurance of value... a powerful silent sales help.

and LABELING SERVICE ...

Advertising

ADVERTISING

THE TUBIZE Policy of Testing and Labeling has been given voice, life and usefulness by years of consistent national advertising to consumer, manufacturer and merchant.

Tubize advertising is constantly building up an appreciation of Rayon... establishing a reliable guide to serviceable Rayon apparel... creating a ready acceptance of merchandise identified with the Tubize Certified Quality Label.

When you use the Tubize Certified Quality Label, the accumulated value of years of Tubize advertising works for your merchandise...it costs you nothing extra...it is a service that is yours for the asking.

Current Tubize advertisements tell of Rayon's great importance in direct war uses...give the women of America definite, helpful hints to make their dresses and lingerie last longer.

TUBIZE CHATILLON *Corporation*

VISCOSE AND ACETATE RAYON YARNS AND FABRICS • 2 PARK AVENUE • NEW YORK CITY

ONE TEXTILE MAN SAID:

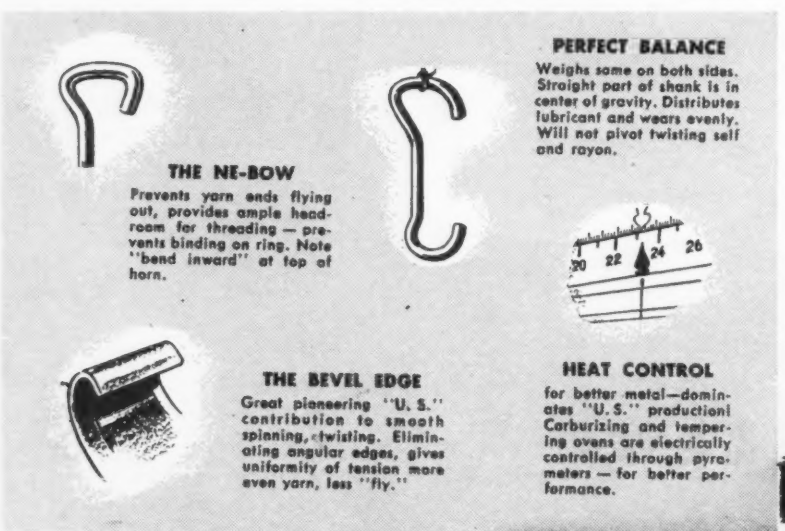
● Textile mill men are hard boiled! We confirmed that when we went out to talk to Ring Traveler users—not just to "sell", but to find out what could be done to improve traveler performance.

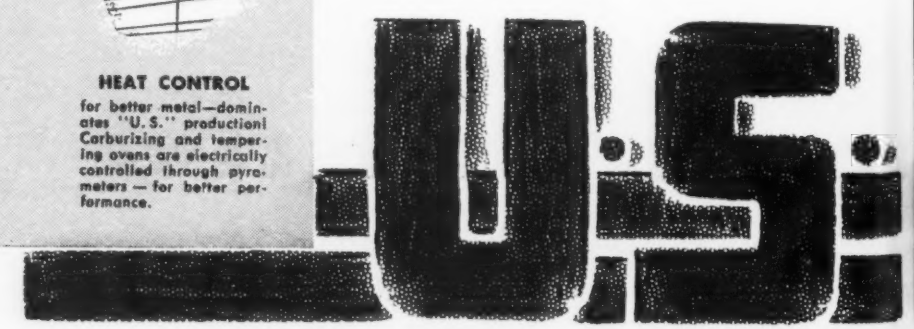
● Maybe we ought to congratulate the man who doesn't want to hear anything about ring travelers! Maybe he's got the exact travelers that suit his conditions and give the most yarn production with least trouble.

● In that case our advice is, stick to *that* type of traveler! But when you get talking to mill men, you realize that no matter how hard boiled they seem, they're mighty interested in anything that is *news,* and might possibly improve operating conditions. Take one example. If you're perfectly satisfied with your present ring travelers, but your source of supply should fall down, you can quickly get exactly *the same type* from "U. S."

● On the other hand, if you think your traveler performance might be improved, we'll gladly work it out with you, without placing you under the slightest obligation. Or if maybe a different type of ring traveler would get out more yarn with less trouble . . . we will design and manufacture exactly *that* traveler, and sup-

BUY MORE
WAR BONDS
AND HELP THE
U. S. RING
UP ANOTHER VICTORY

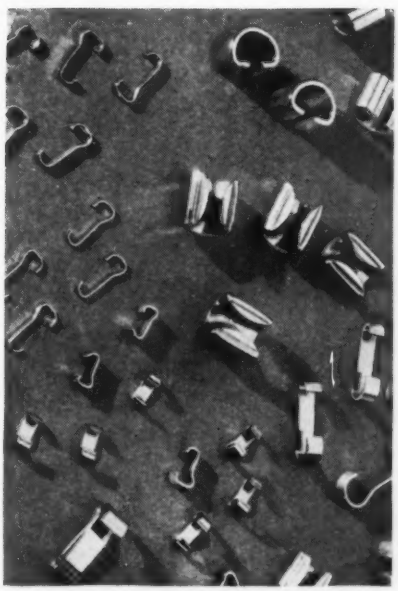

THE NE-BOW
Prevents yarn ends flying out, provides ample headroom for threading — prevents binding on ring. Note "bend inward" at top of horn.
PERFECT BALANCE
Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.
20 22 24 26
THE BEVEL EDGE
Great pioneering "U. S." contribution to smooth spinning, twisting. Eliminating angular edges, gives uniformity of tension more even yarn, less "fly."
HEAT CONTROL
for better metal—dominates "U. S." production! Carburizing and tempering ovens are electrically controlled through pyrometers — for better performance.



No. 11 OF A SERIES
BASED ON INTERVIEWS WITH TEXTILE MEN who want more production

"...Ring Travelers!"

(maybe we ought to **CONGRATULATE** *him!)*



ply it in absolutely uniform lots, whether you order a few thousand or millions! We don't claim "U. S." will produce your perfect traveler "overnight"—but you'll GET IT.

● The close control in the manufacture of these small items is the real secret of their long life and their efficient service. Metallurgical control, precision manufacture, testing, record-keeping, all worked out to an amazing degree. But the whole thing, of course, is only valuable insofar as it is valuable to *your* mill. With the textile industry facing unprecedented demands for production, and unprecedented problems of machinery deterioration and upkeep, and the difficulty of getting replacement parts, maybe we *can* tell you a thing or two about ring travelers which will help you.

● *In any event, why not let us send a real practical mill man—not just a salesman—up to your mill, without obligation to you. A man who's been an overseer and a super himself, run frames, knows what it's all about. We guarantee he will not waste your time or your money, but give SERVICE. A wire or a letter from you today gets prompt action!*

SOLD UNDER THESE TRADE NAMES

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

U. S. RING TRAVELER COMPANY

PROVIDENCE — AMOS M. BOWEN, President and Treasurer — RHODE ISLAND

RING TRAVELERS

A Traveler for Every Fibre

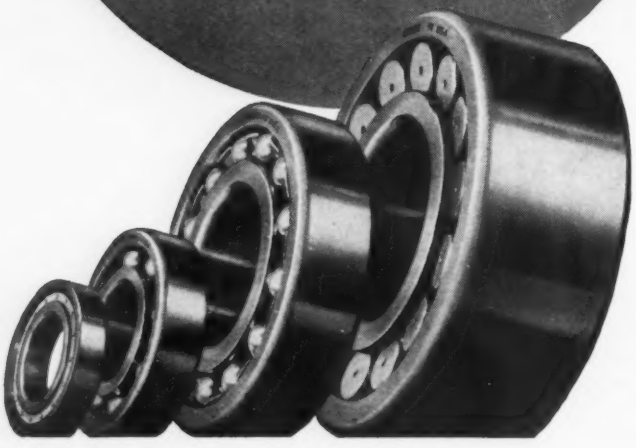
HE TRAVELERS THAT KEEP GOING!

U.S. RING TRAVELER CO.

Fletcher EXTRACTORS HURRY VICTORY ON SKF BEARINGS

● *Built by*
FLETCHER WORKS

SKF
Ball and Roller
BEARINGS



In the textile and dyeing plants of America, SKF Bearings are helping "Whirlwind" Extractors to hurry the War along. They're doing their bit by carrying the heavy combined radial and thrust loads with minimum attention day after day, year after year. When a machine is SKF-equipped, it's equipped for Victory. 5331

SKF INDUSTRIES, INC., PHILA., PA.

TEAMWORK WINS THE "E" FOR ALOYCO

■ On June 17th, officers of the Army and Navy presented the "E" Award to "the Men and Women" of the Alloy Steel Products Company. This honor was won by the untiring energy and devotion to duty of each employee, and by a spirit of loyal cooperation and teamwork among all.

Our organization is fortunate that the same stainless steel valves we produced for chemical, food and process plants in times of peace were required in large quantities for production of war materiel.

The Men and Women of this Company express their heartfelt thanks for this recognition of their efforts and will not relax in their determination to produce more and more valves until this war is won.

Aloyco Stainless Steel Valves and Fittings . . .

ALOYCO

ALLOY STEEL PRODUCTS COMPANY, INC.

1300 WEST ELIZABETH AVENUE • LINDEN, NEW JERSEY

*NEUTRALIZATION

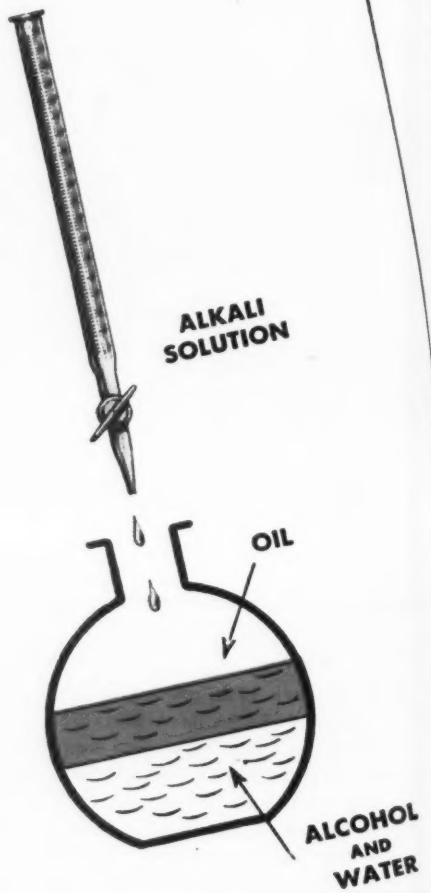
DEFINITION: The neutralization number is the weight in milligrams of the amount of potassium hydroxide (KOH) required to neutralize the acid constituents in one gram of oil.

NEUTRALIZATION TEST: Following a carefully prescribed procedure, a definite quantity of oil together with a mixture consisting of equal parts distilled water and alcohol are agitated thoroughly and heated to boiling. A phenolphthalein indicator is added and a solution of aqueous potassium hydroxide of definite strength is poured into the mixture in small increments and shaken vigorously each time. The first appearance of a sharp pink color throughout the alcohol water layer indicates the point of complete neutralization.

The number of milligrams of potassium hydroxide per gram of oil required to achieve this result is called the Neutralization Number.

SIGNIFICANCE: Corrosive mineral acids are sometimes used during the refining process of certain crudes. As a precaution against their presence in harmful proportions, it is customary to specify a maximum Neutralization Number of 0.10 for clear colored, straight mineral lubricating oils.

The Neutralization Number has no such significance in connection with unfiltered cylinder oils and black oils. These may contain larger amounts of harmless organic acids originating in the crude petroleum. High Neutralization Numbers do not imply corrosive acidity with compounded oils; i.e. mixtures of mineral oils and fatty oils. The latter oils are often inherently high in organic acidity.



INDUSTRIAL TYCOL OILS-GREASES

OIL IS AMMUNITION
USE IT WISELY!

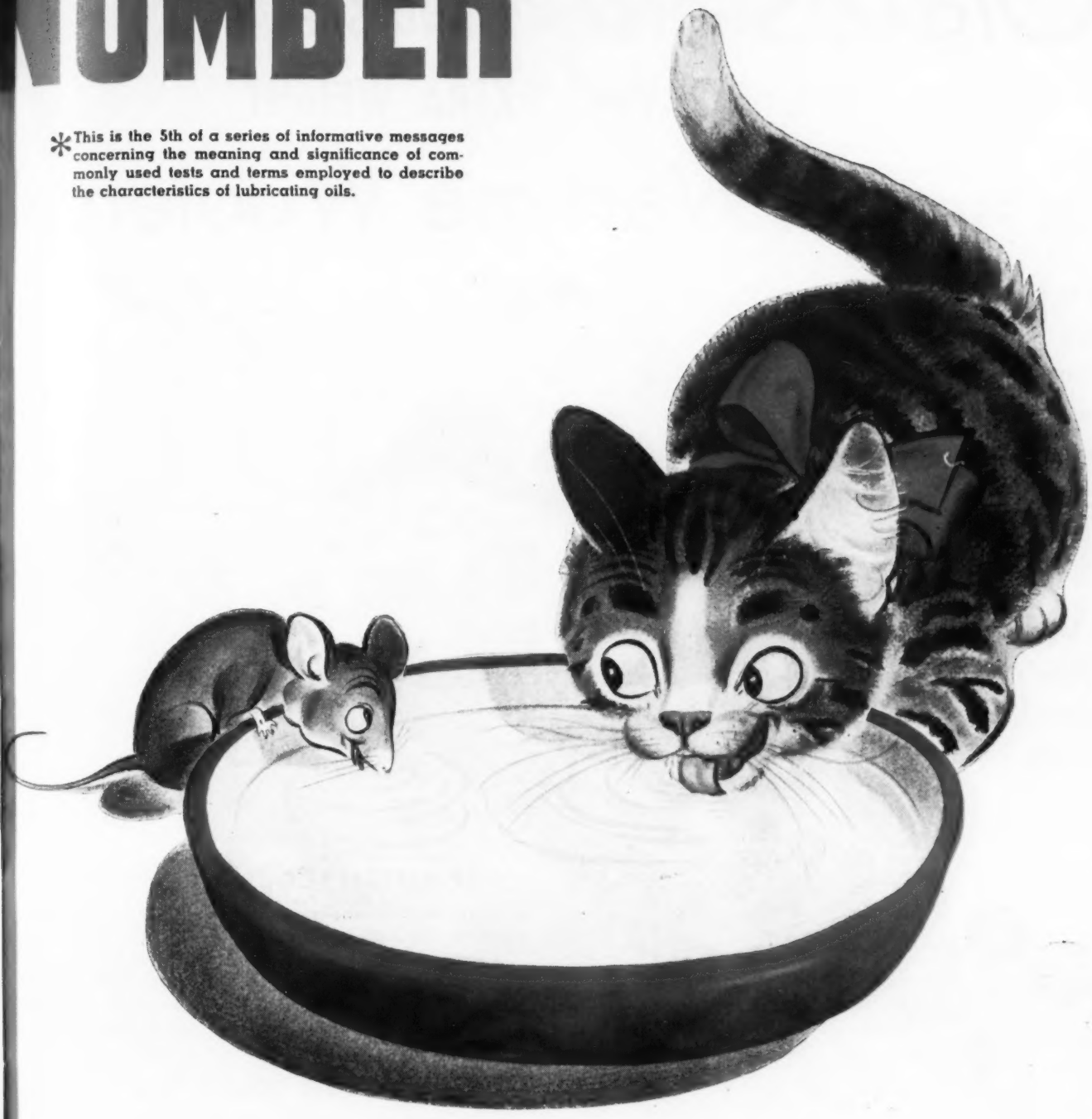
DRUMS! DRUMS! DRUMS!
War needs make it extremely important that all empty drums be returned immediately.

SCIENTIFICALLY ENGINEERED FOR EVERY INDUSTRIAL USE

TYCOL

NUMBER

*This is the 5th of a series of informative messages concerning the meaning and significance of commonly used tests and terms employed to describe the characteristics of lubricating oils.



Tycol lubricants are manufactured in a comprehensive line so as to meet every specific operating requirement. Whether straight mineral or compounded, they are produced under rigid control to assure freedom from all harmful acidity.

Tide Water Engineers will recommend the Tycol lubricant best suited to your particular requirements.

TIDE WATER ASSOCIATED OIL COMPANY

Eastern Division: 17 Battery Place, New York 4, N. Y. • *Principal Branch Offices:* Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

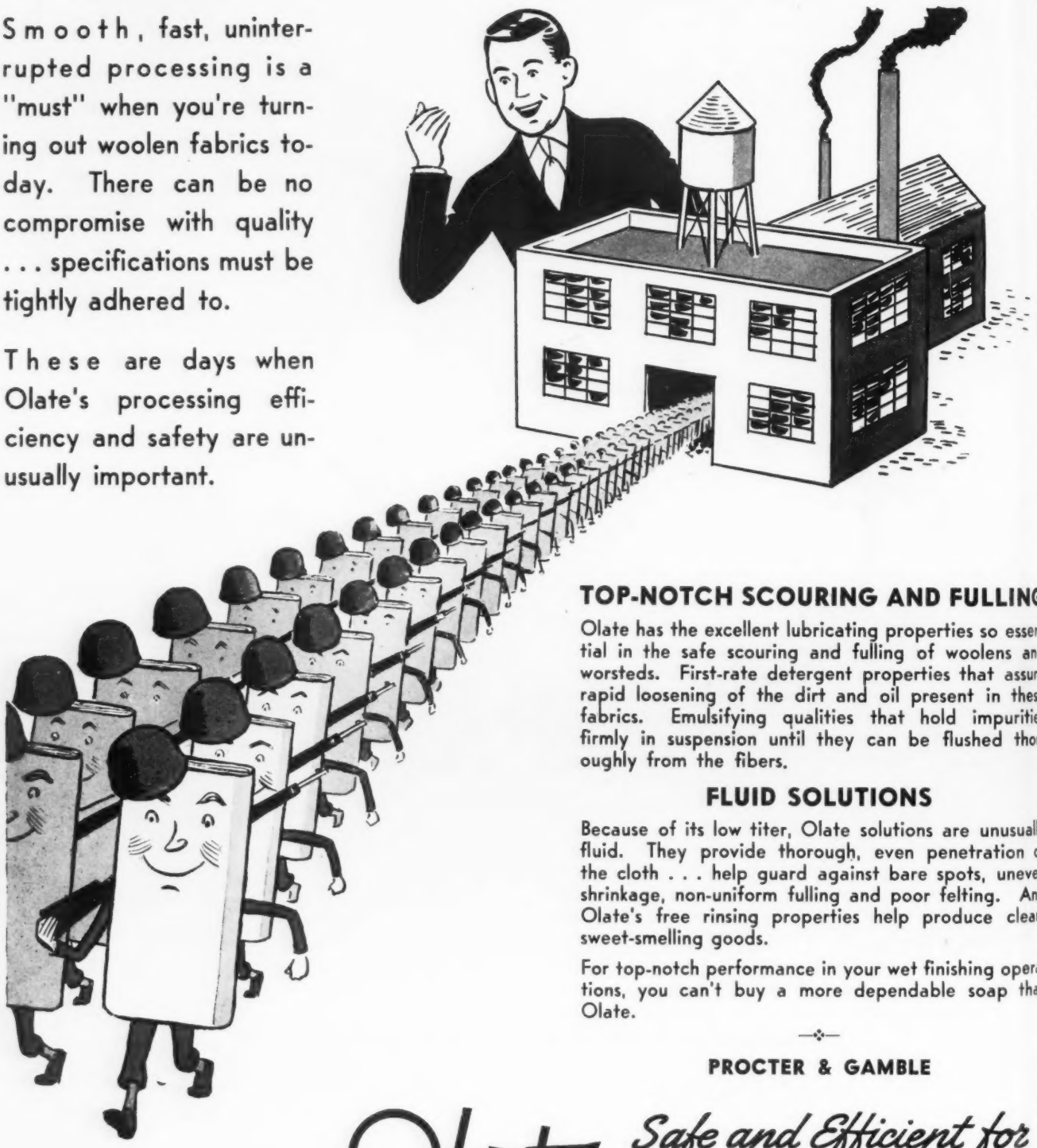
MAKERS OF THE FAMOUS VEEDOL MOTOR OIL

INDUSTRIAL LUBRICANTS

Olate's EFFICIENCY AND SAFETY ARE CARRYING EXTRA WEIGHT IN PROCESSING Wartime Woolens

Smooth, fast, uninterrupted processing is a "must" when you're turning out woolen fabrics today. There can be no compromise with quality . . . specifications must be tightly adhered to.

These are days when Olate's processing efficiency and safety are unusually important.



TOP-NOTCH SCOURING AND FULLING

Olate has the excellent lubricating properties so essential in the safe scouring and fulling of woolens and worsteds. First-rate detergent properties that assure rapid loosening of the dirt and oil present in these fabrics. Emulsifying qualities that hold impurities firmly in suspension until they can be flushed thoroughly from the fibers.

FLUID SOLUTIONS

Because of its low titer, Olate solutions are unusually fluid. They provide thorough, even penetration of the cloth . . . help guard against bare spots, uneven shrinkage, non-uniform fulling and poor felting. And Olate's free rinsing properties help produce clean, sweet-smelling goods.

For top-notch performance in your wet finishing operations, you can't buy a more dependable soap than Olate.

—◇—

PROCTER & GAMBLE

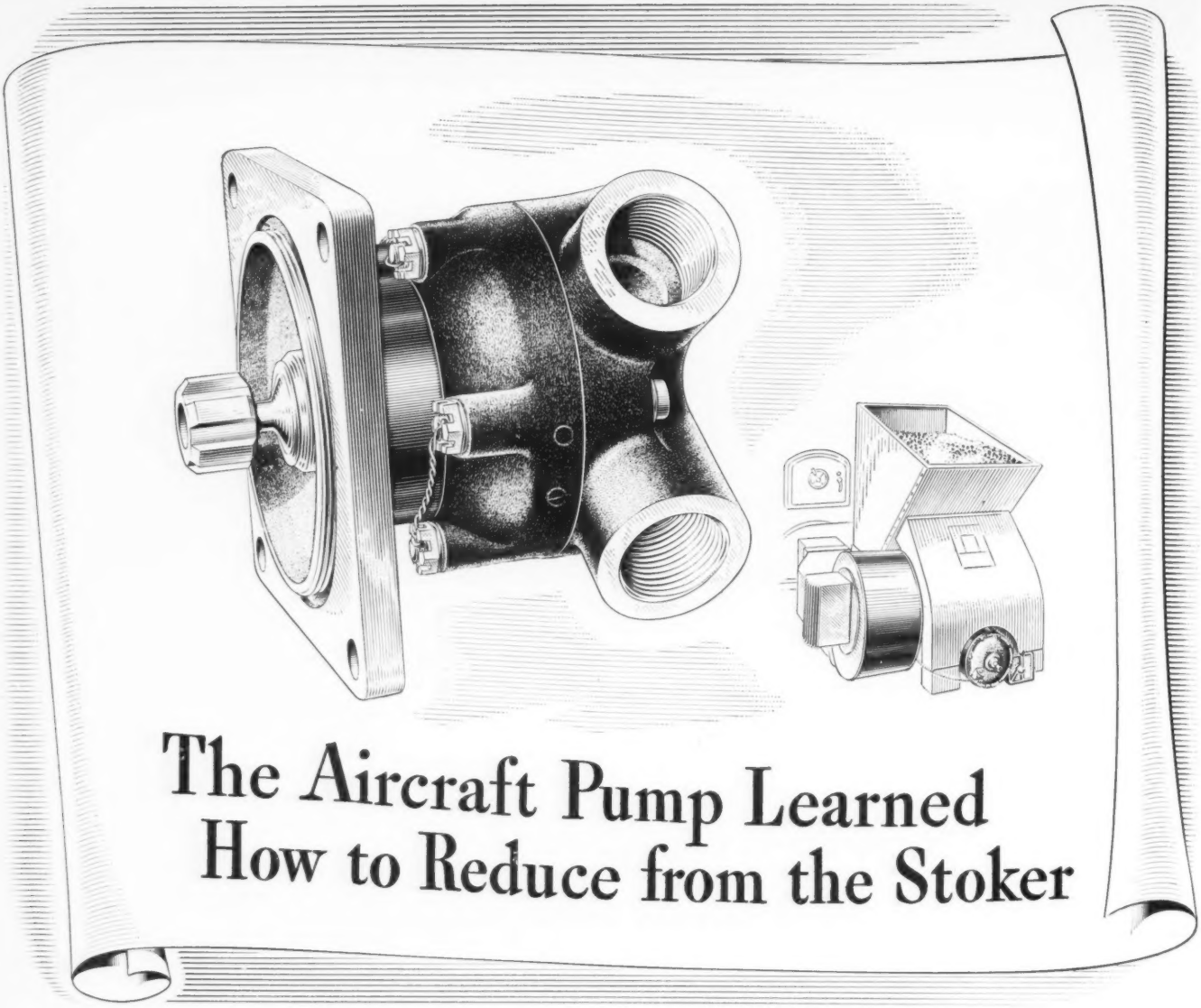
Olate *Safe and Efficient for Every Textile Soap Usage*

Watchful for clothing that gives lasting service are the thousands of men, women and youngsters who seek recreation on the beaches this summer. More than ever before they are selecting knitted swimsuits for *durability.* In producing articles that meet this demand, it pays to use Torrington Needles. Torringtons have that extra degree of *machine-made* uniformity, in temper, finish and dimensions, which makes the difference between ordinary and *quality* knitting.

TORRINGTON latch NEEDLES

The Torrington Company, Torrington Conn., U.S.A., Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. • Boston • St. Louis • Toronto, Canada



The Aircraft Pump Learned How to Reduce from the Stoker

YOU'D hardly expect an airplane pump to have even a nodding acquaintance with a coal stoker. Down-to-earth, extremely rugged, the stoker is built with heavy service conditions uppermost in mind. It's no surprise, then, to find Torrington Needle Bearings on the job—with their high load-carrying capacities, and ease of lubrication.

With aircraft pumps, the story is somewhat different. Here the design problem was not so much one of ruggedness as keeping size and weight down to an absolute minimum. But the fact that no special means of lubrication need be provided with the Needle Bearing soon had the pump people "weighing" its other advantages, with an eye to simplifying design and increasing production efficiency.

Everyone of its features, they found, fitted right into the military airplane picture. The Needle Bearing's compactness squarely met the problem of space limitations invariably encountered in aircraft design, and contributed importantly, also, to weight-reduction. While long-life, low-cost, and ready availability for essential applications are among the significant "little things" which enabled the industry to meet and top the staggering production demands of the Government's airplane program.

NEEDLE BEARINGS— ALL TYPES—ALL SIZES

NEEDLE BEARINGS TYPE DC are complete, self-contained units consisting of a full complement of rollers and a drawn hardened outer race. They offer the advantages of small size, low cost, high capacity—and easy installation.

NEEDLE BEARINGS TYPE NCS consist of a full complement of rollers and a relatively heavy hardened outer race. They are furnished with or without inner races. Needle Bearings Type NCS are adaptable to heavier loads than Needle Bearings Type DC.

NEEDLE ROLLERS TYPE LN are produced in a range of sizes for assembly into low-cost, high-capacity anti-friction bearing units. They are designed for use in applications which require assembly of the bearing on the job.

NOW CONSIDER YOUR OWN POSTWAR DESIGNS

Isn't there an idea in the Torrington Needle Bearing which you might use to good advantage in your postwar designs? Tomorrow's most-wanted products will be considerably lighter, yet capable of heavier loads . . . longer-lasting, yet requiring practically no maintenance attention. Let Torrington engineers show you how you can give your product these and other new-day advantages of the Needle Bearing. As preliminary information, a list of typical applications in Catalog 116 may prove helpful to you in postwar planning.

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Established 1866 • Torrington, Conn. • South Bend, Ind.

Makers of Needle Bearings and Needle Bearing Rollers

New York Boston Philadelphia
Detroit Cleveland Seattle
San Francisco Chicago Los Angeles
Toronto London, England

LET'S GO! U.S.A. KEEP 'EM FLYING!

TORRINGTON NEEDLE BEARINGS

FOR BETTER RESULTS WITH SYNTHETIC ROLL COVERING

. . . use Accotex Cots

RESIST GROOVING—Long life even under severe operating conditions.

LESS EYEBROWING—Have good friction for better drafting.

QUICKER ASSEMBLY—Inner surface ready-coated with water-soluble glue.

UNIFORM WEAR—Homogeneous composition assures equal life of every cot.

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THE exceptional qualities of Accotex Cots are the result of eight years of testing in field and laboratory . . . of Armstrong's *twenty-six years of experience in rubber and synthetic rubber processing* . . . and twenty-one years of developing and manufacturing textile roll coverings.

These synthetic rubber roll coverings are recommended especially for heavy-duty jobs—on back line rolls of long draft roving frames, for example, or on rolls spinning coarse numbers. And, because Accotex Cots have a high resistance to moisture, they are ideal for use on wet twisting equipment. In all of these applications, the initial life of Accotex is long. And for extra life, you can rebuff them several times.

In addition to making synthetic rubber cots, Armstrong is the largest manufacturer of cork cots. So, when you buy from Armstrong, you buy from an organization that understands your problems . . . and can help you solve them with unbiased recommendations on roll coverings.

Your Armstrong representative will be glad to give you full information about Accotex Cots. Meanwhile, write for your free copy of the 16-page booklet, "Modern Textile Roll Coverings." Address Armstrong Cork Company, Textile Products Section, 8307 Arch Street, Lancaster, Pennsylvania.

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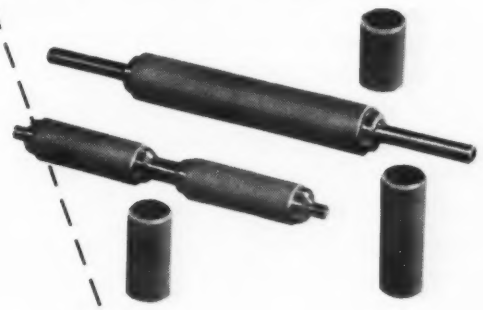

KEEP 'EM "METERING"..

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to get longer life, best service from
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FLOW METERS
Check These Points Now
Keep in Mind The Following Points
IF IN DOUBT, CALL A FOXBORO ENGINEER
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Meters are but one of many industrial instruments that are essential in the war-production of most plants. They're too important nowadays to permit any risk of interruptions or inaccuracies in their operation. Yet, all it takes to get proof-positive assurance against needless instrument shut-downs is a simple maintenance routine.

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Foxboro Quick-Check Cards are available without charge, to any user of industrial instruments. Although designed specifically for Foxboro Instruments, they serve equally well for other standard instruments. They cover major servicing points important to all makes.

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ARMY E NAVY

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Instruments

30% Savings BY USING Clipper BELT LACING EQUIPMENT

The Timken Roller Bearing Co. of Canton, Ohio, has effected a saving of about 30% in consumption of belt hooks by using Clipper Belt Hooks, Clipper Lubrihide Pins and Clipper Speed Lacers.

You, too, can make worth-while savings by using ALL THREE Clipper products.

Remember, only Clipper Belt Hooks are packed with the long wearing **Lubrihide Pins.**

The **Clipper No. 9 Portable Lacer** develops pressures up to 16 tons. With such pressure, hook legs can be embedded flush with the surface of any kind of belt and points clinched.

The scientific action of the jaws forms a perfect line of well rounded loops permitting the use of maximum diameter **Lubrihide Pin,** also providing equal distribution of pulling strain on every hook. A belt joint so made will outlast by two to three times one made with an old-style portable lacer.

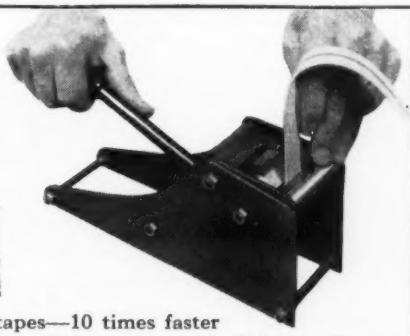
We suggest that you check YOUR belt lacing situation. Send for folder describing the powerful Clipper No. 9 Portable Lacer and other Clipper products. Phone your Mill Supply Jobber for a demonstration!

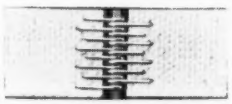
Clipper No. 9 Portable laces belts up to 6 inches wide in one quick, easy operation.

Scientific action of Jaws forms

a perfect loop for connecting pins.

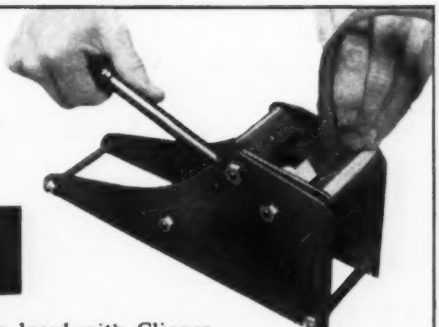
CLIPPER SPINDLE TAPE LACING EQUIPMENT

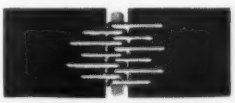




You can lace spindle tapes—10 times faster than stitching — with Clipper No. 25 Spindle Tape Hooks. The spinning frame is shut down only long enough to place the new tape on the pulleys and join the ends with the connecting pin — a short, easy operation. Tapes run true—last longer—run smoother—require less tension. VIBRATION is ELIMINATED.

CLIPPER CONDENSER TAPE LACING EQUIPMENT





Condenser tapes are laced with Clipper No. 25 Condenser Tape Hooks. The joint is as flexible as the tape itself. Clipper Laced Condenser Tapes can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving, and cut to length. WRITE FOR INFORMATION.

CLIPPER BELT LACER COMPANY GRAND RAPIDS, MICHIGAN, U. S. A.

Clipper

SPEED VICTORY by NOT INTERRUPTING PRODUCTION

BELT LACING EQUIPMENT

GULFGEM OIL

has set a new standard

for spindle lubrication

Super-refining by the Alchlor Process
insures greater protection against spindle wear,
longer intervals between spindle base cleaning periods,
fewer ends down, and lower power consumption.

WITH spindle lubrication such a vital factor in spinning production, a majority of leading mills insure proper lubrication by using Gulfgem Oil.

This highest quality lubricating oil is not only refined by conventional methods, but is super-refined by the Gulf Alchlor Process, the most effective method yet known for removing impurities and unstable hydrocarbons from oil—the undesirable constituents which cause oxidation and gum formation.

Thus Gulfgem Oil provides a tough and stable film which insures minimum wear, minimum ends down, minimum power consumption, and maximum intervals between spindle base cleaning periods. Gulfgem Oil is the world's finest oil for spindle lubrication!

We suggest that you talk with the Gulf Lubrication Service Engineer in your vicinity about this superior spindle lubricating oil at your first opportunity. He will be pleased to give you complete details—without obligation.

GULF INDUSTRIAL LUBRICATION

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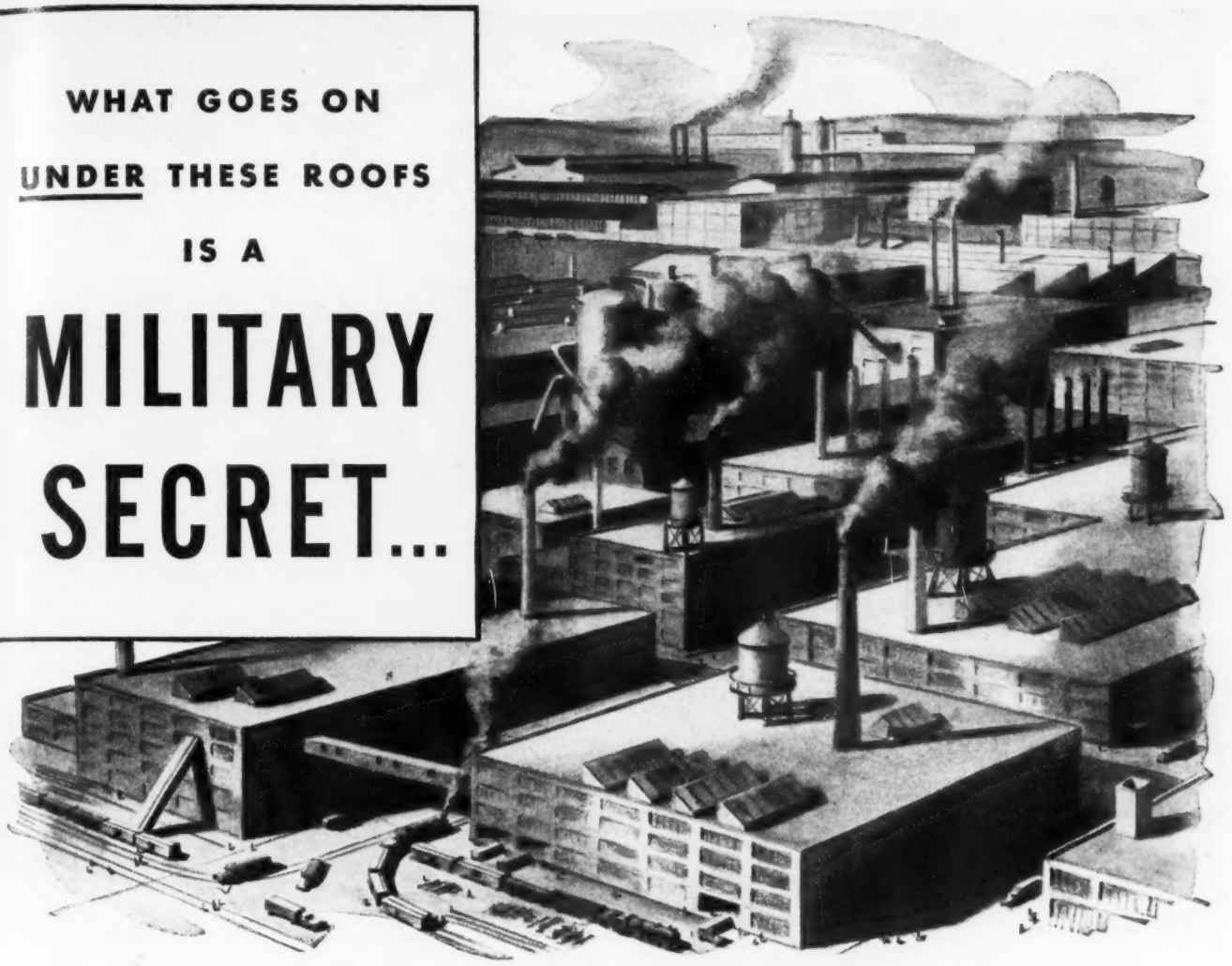
GULF BUILDING · PITTSBURGH, PA.

WHAT GOES ON

UNDER THESE ROOFS

IS A

MILITARY SECRET...



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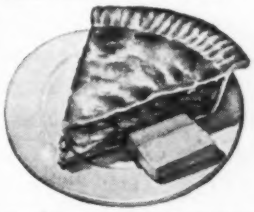
PROVIDE YEARS OF TROUBLE-FREE PROTECTION!

INDUSTRIAL builders agree on this rule: When you put on a roof, put on a *good* roof! There's real economy in the long, trouble-free protection afforded by a Celotex Bonded Built-Up Roof, available with 10, 15, or 20-year bond—your written guarantee of freedom from repair expense for a definite period of years!

Celotex Bonded Built-Up Roofs are well known to industry. They meet Celotex world-famous standards of quality in every respect. That is why they have been chosen to guard vital war plants in all parts of America. When a contractor is licensed to apply Celotex Built-Up Roofing Products, you may rest assured that he knows his business thoroughly and well.

"Go Together Like Apple Pie and Cheese"

Before you sign a contract, investigate the advantages of using Celotex Vapor-seal Roof Insulation in combination with a Celotex Bonded Built-Up Roof. They go together like apple pie and cheese—give you the benefit of centralized responsibility—because both are products of the same responsible manufacturer. Mail the coupon!



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THE CELOTEX CORPORATION • CHICAGO

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We are proud of the M-H/Brown background of over 100 years experience in instrument engineering which *pioneered electronic instrumentation.* Today these instruments are producing the tools of war. When peace comes they will be available to industry. *M-H/Brown Electrons are coming.*

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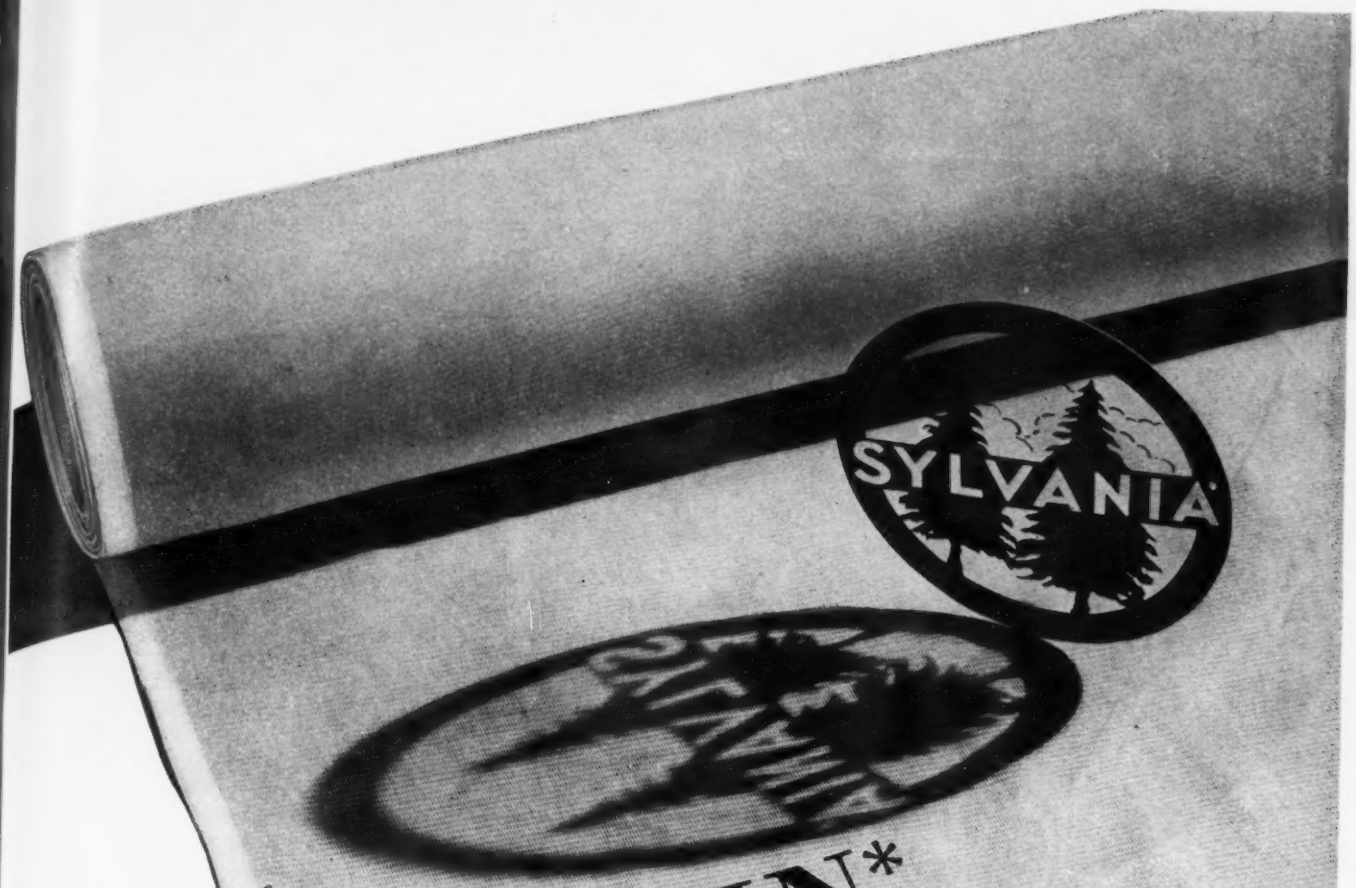

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CEGLIN* is adaptable to a broad variety of finishes for most fabrics. Proper manipulation of this cellulose material makes possible a finish which cannot be duplicated with other products. CEGLIN is fast to repeated laundering. It is economically applied, not only in the conventional manner, but also before kier-boiling. CEGLIN works equally well with pigment dyes and water-repelling or mildew-proofing agents. Its use results in a lint-free product of increased strength and durability.

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On top of . . . *tomorrow!*

Funny place for a man to make his office—especially if he doesn't happen to belong to an "open-air" cult.

But watching which way the wind blows is serious business these days, for war is constantly altering the direction which industry will take when peace returns. Shifts are sudden . . . and their effects are felt in unexpected places . . . influencing products, transforming plans.

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MICHIGAN ALKALI DIVISION • WYANDOTTE, MICH.

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Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

Cures the Biggest Headaches in Textile Plants

And those headaches are bearing troubles. The high speeds that textile machinery must operate, often under humid conditions, is bound to cause bearing trouble unless proper lubrication is used.

You will find LUBRIPLATE the best lubricant ever developed for the textile industry. Here are just a few of the thousands of glowing reports from satisfied users. *"Comb boxes run at reduced temperatures, free from chatter."* . . . *"is doing a fine job in our air compressor"* . . . *"outlasts many times the spindle oil previously used"* . . . *"not a single bearing failure or repair in a year-and-a-half."*

Yes, LUBRIPLATE Lubricants are different. Besides doing a better lubricating job they condition bearing surfaces, arrest progressive wear and prevent rust and corrosion. Don't take our word for it. Try LUBRIPLATE yourself and the results you get are our bid for your future business. Send for descriptive literature written especially for the Textile Industry.

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NEWARK, N. J. **SINCE 1870** TOLEDO, O.
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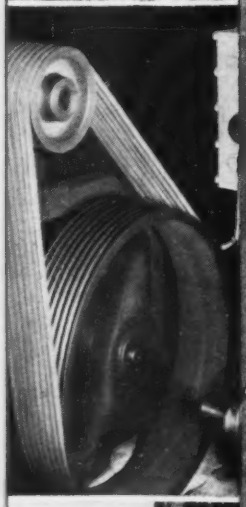

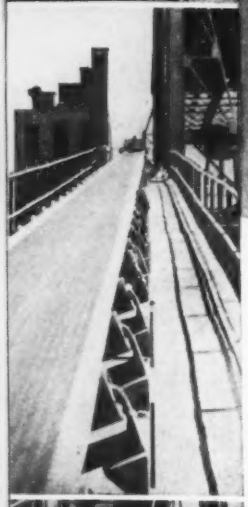

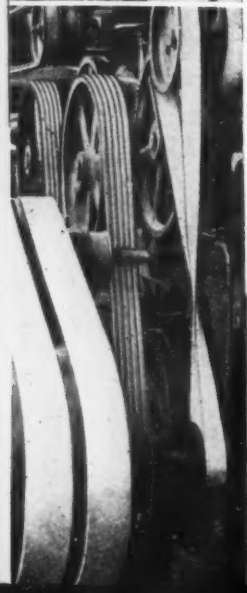

MANHATTAN

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Condor PRODUCTS

- Conveyor and Elevator Belt
- Compensated Belt
- Transmission Belt
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- Fire Hose
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- Oil and Gasoline Hose
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THROW YOUR SCRAP INTO THE SCRAP!

KEEP AHEAD WITH MANHATTAN

FLEXLASTICS

WHAT THEY MEAN TO YOU IN INDUSTRIAL RUBBER SERVICE . . .

Here is a name full of meaning—a vital, manifold meaning, the importance of which is stressed and highlighted by war and scarcity.

MANHATTAN FLEXLASTICS* are of over 1,000 kinds—each accurately compounded of one or more forms of "manufactured" and natural rubber with different ingredients in correct proportions and then given its ultimate qualities by closely controlled processing.

Rubber compounding is an art, seasoned with scientific research, development and controls. To formulae must be added the skill and experience of the processor. "Rubber goods made only of rubber would be as useless as a cake made of nothing but flour."

It is from long practice of this art that the three essential qualities have been built into MANHATTAN mechanical rubber goods. These essential and inclusive qualities are *flexibility, elasticity* and *lasting service.* Together, they are embodied in FLEXLASTICS*—a term which aptly and fittingly describes the various types of "rubber" which are used in making such MANHATTAN products as flat power transmission belts; V-belts; conveyor belts; steam, water and air hose; fire hose; oil-well drilling hose; rubber covered rolls; rubber linings for processing tanks, piping and equipment; and a myriad specialties used on aircraft, ships, war and production equipment.

The long list of achievements like Condor Compensated Belt, Homo-Flex Hose, Homocord Belt, the Extensible Tip for endless belts, Radio-Active Treated Fire Hose and many others illustrate how well MANHATTAN has applied the art of rubber making. Some of these developments, available to industry only after Victory, will be important factors in the shifting tide of production.

It will always be sound policy to keep ahead with MANHATTAN.

50 YEARS OF RESEARCH

1893 **1943**

. . . Only the name is new. Back of FLEXLASTICS is a half century of engineering and chemical research and experience which combine the skilled application of FLEXLASTICS with properly located* strength members *for long-lasting service from natural, reclaimed and "manufactured" rubbers.*

*. . . Compounding of the several types of "manufactured" and natural rubbers with other ingredients and processing them to obtain the required chemical and physical qualities is another important contribution by MANHATTAN to the comprehensive advantage you will obtain from FLEXLASTICS.**

**The term FLEXLASTICS is a Manhattan Trade Mark. Only MANHATTAN can make FLEXLASTICS.*

THE MANHATTAN RUBBER MANUFACTURING DIVISION

of RAYBESTOS-MANHATTAN, INC.

EXECUTIVE OFFICES PASSAIC, NEW JERSEY

BEST DRESSED MEN IN THE WORLD

YOU don't need any introduction to these men – they're your sons, your brothers, your neighbors' boys. Fighting for you – for America – with the finest equipment and materials America can give them. That includes both equipment you see and equipment you don't see.

Take their uniforms, for instance – and their blankets, tents and parachutes. Millions of units of sturdy textiles are needed to equip our armed forces. Thousands of tons of chlorine are used in bleaching these materials – that's where a big supply of Mathieson chlorine goes.

And their planes, tanks and munitions – the best that America can supply. Mathieson Chemicals fill many a vital need in their manufacture. Mathieson chlorine helps in the production of warplane cowlings, high octane gasoline, explosives, cooling agents for liquid-cooled engines, and certain types of synthetic rubber. Mathieson soda ash is required in the making of explosives, aluminum, iron, steel and war-essential glass. Other war needs consume large amounts of Mathieson caustic soda, ammonia and carbon dioxide.

Sanitation materials are another important item. Great quantities of Mathieson HTH are going out to help assure our troops of pure drinking water – overseas – on shipboard – in training camps.

The best is none too good for our fighting men – and we here at The Mathieson Alkali Works are making an all-out effort to help give it to them. We're all in this war together – we all want to help America win!

Mathieson CHEMICALS

THE MATHIESON ALKALI WORKS (Inc.) 60 EAST 42nd STREET, NEW YORK, N. Y.

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Textile World

July, 1943 • VOLUME 93 • NUMBER 7

A McGRAW-HILL PUBLICATION

TEXTILE WORLD (formerly *Textile World Journal*) with which are combined *Textiles, Posselt's Textile Journal* and *Textile Advance News*. Published monthly. United States and Possessions and Latin American Republics, $1.50 a year; Canada and all other countries, $2, U. S. currency or 12 shillings. Single copy 25c. Annual Index in "Textile World Yearbook & Catalog."

Of this issue 16,590 copies were printed

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Mill Maintenance Section 99

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IN THE NEXT

PREVENTIVE MAINTENANCE of motors in textile mills will be discussed at length in a comprehensive article in the August issue. Contributed by recognized authorities, this article will be of value to textile men in all branches of the industry. It is particularly timely, since under wartime scarcities motor replacement is being discouraged and skillful maintenance is a direct contribution toward the drive to boost production.

Another outstanding article in the August issue is the first of a series of articles on styling and designing consumer fabrics. This will be especially helpful to textile mill executives in conjunction with post-war planning.

Among other technical articles tentatively scheduled for August are Methods for Handling Chemicals Safety, Improved Techniques in Rayon Soaking, Know Your Cotton Spinning Drafts, Preventing Knitting Defects.

There will be something to interest everyone in the "Mill Men's Round-Table," "Kinks & Short Cuts," and "Questions & Answers," to which departments experienced mill men are making valuable contributions.

CHANGE OF ADDRESS

McGRAW-HILL PUBLISHING COMPANY
330 West 42nd Street, New York, N. Y.

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Change my address on TEXTILE WORLD

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To.....

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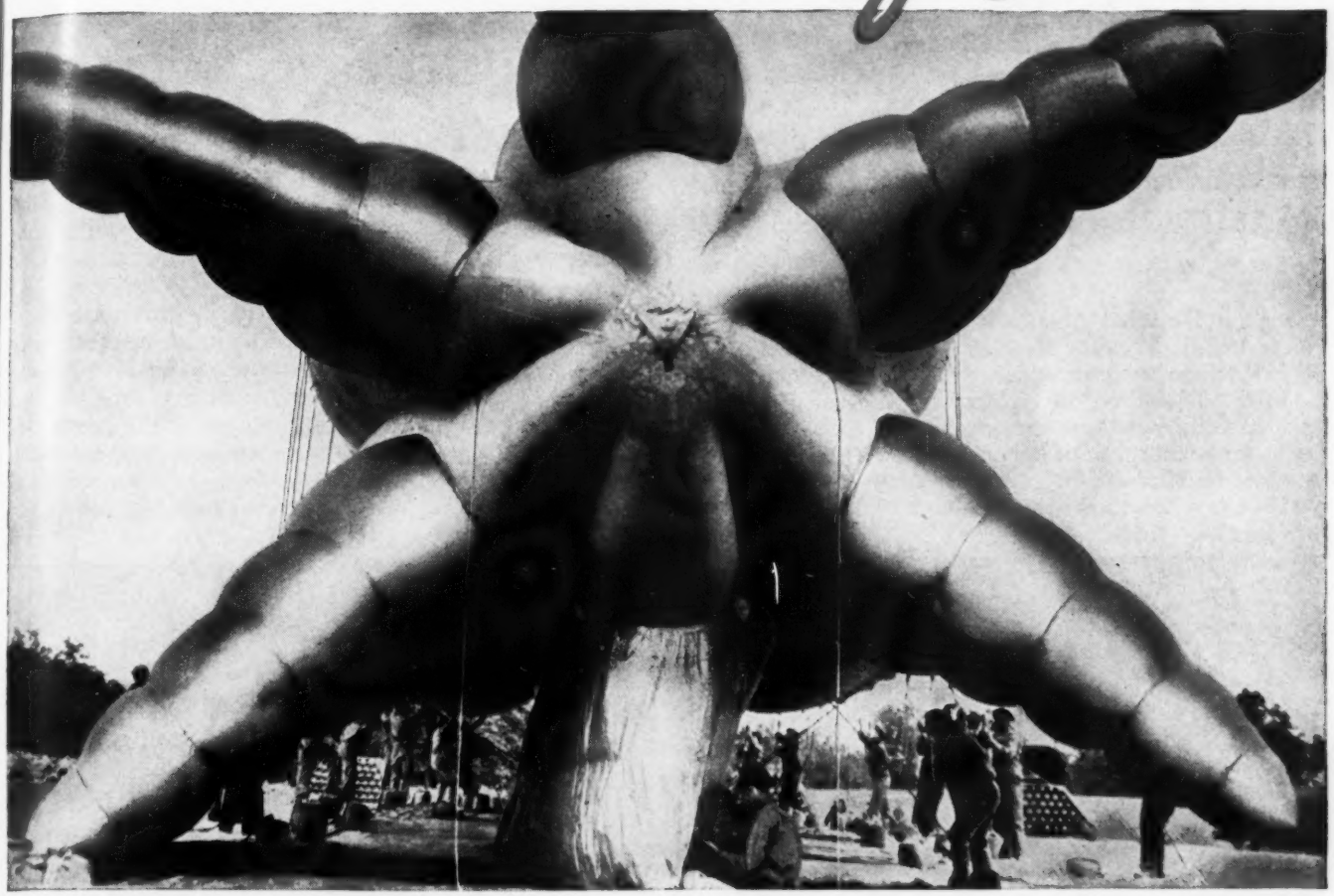
SKY DEFENDERS... *of Cloth*



WHEN inflated and sent aloft, giant barrage balloons like this are proving effective weapons against diving or low-flying enemy planes. Used for protecting vital land areas, ships and convoys, they represent an all-important wartime use of fabrics.

Producing fabrics for balloons and other Army-Navy uses, as well as civilian, is placing heavy loads on textile machinery. To maintain their equipment at peak, prominent mill operators everywhere are using Texaco.

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FOR THE TEXTILE INDUSTRY

TUNE IN THE TEXACO STAR THEATRE EVERY SUNDAY NIGHT — CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Simple . . . because it's electrical

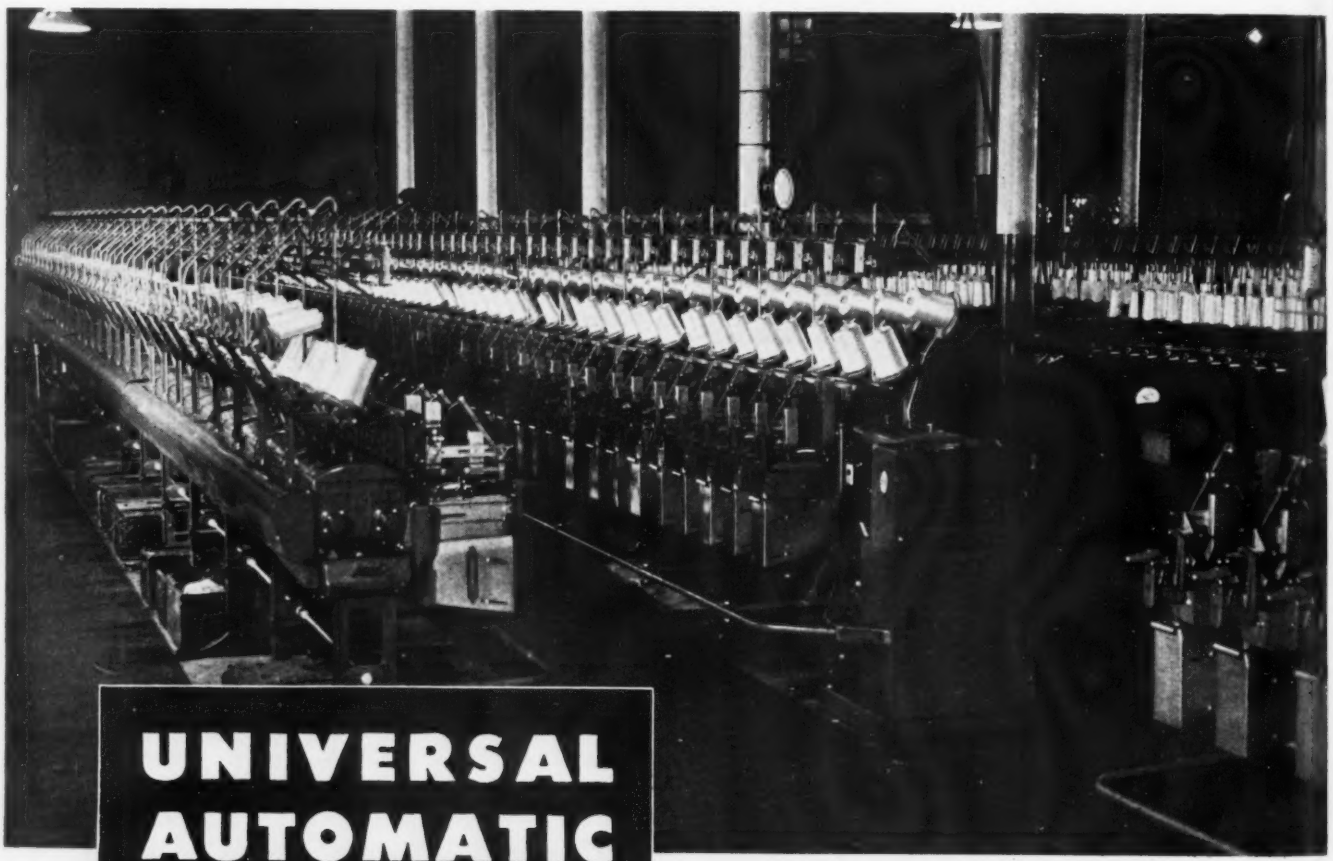
The modern trend in machine design is to use electrical, rather than mechanical means of doing work. Universal, responsible for developing the Rotating Traverse, is also the first winding machine manufacturer to take real advantage of the miracles of Electricity.

In the Universal Automatic High Speed Bobbin Winding Machine (No. 99), *electrical* means—proven successful and safe on hundreds of types of industrial equipment—are employed to perform the functions of bobbin loading, winding and doffing.

The use of electrical controls means that the *simplest* possible mechanisms are provided to do the work. Less machinery is needed– fewer cams, gears, shafts—and there is less opportunity for wear and breakdown.

For example, to relieve strain on the yarn at the start of winding, it is helpful to open the tensions momentarily. To transmit motion from the power source to the tensions high above the spindle, a wire and a solenoid take the place of the several mechanical connections which would otherwise be necessary.

Experience to date has proved that the use of electricity increases efficiency and reduces repair, without introducing any undesirable factors. After the war, many mills will enjoy the benefits of quality winding at high speeds, with loading and doffing performed automatically, on the Universal Automatic.



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43—99—2

Engineering Design
—Creator of America's Mechanized Might

In war, as well as in peace, the design engineer is the vital link between the inventive mind and the mass-production reality

It is gratifying and interesting to note that reports of new "secret weapons" not only have reversed their course during the past few months . . . they also have increased in frequency. Once they filled us with dread and misgiving. Today the enemy does the worrying.

Word about the latest new Army weapon reached us as this was being written . . . a 2½ ton truck that performs on water as well as on land with equal efficiency. "The Duck", resembling an overgrown amphibious jeep, is particularly suited to landing operations where docks are lacking. Loaded with 20 fully equipped soldiers or their equivalent in supplies, its propeller runs it ashore. It climbs the beach on its six-wheel drive and continues the trip on land.

This important addition to our "second-front" fighting equipment, coming so closely on the heels of the now famous tank-killing "Bazooka", is one of many history making contributions of American design engineers — the men who transform nebulous ideas into practical realities — the men who make our war machines superior to those of our enemies.

Invasion and eventual victory became a certainty as soon as America's design engineers threw their full effort into the war against aggression. Adapting intricate ordnance designs to mass production, these men developed weapons such as the M-10 destroyer of Rommel's tanks and brought out the new fighting planes and bombers that have won the air superiority that has turned the tide against the Axis. Taking ideas and giving them form, selecting the materials of construction, deciding upon the method of fabrication, adapting the electrical and mechanical parts that power the product, specifying the finish that protects and beautifies it . . . these men are the focal point of American production. Their ingenuity has no parallel. Once they put automobiles on a mass production basis and within the reach of all. Today, after less than three years and with little previous experience in armament design, they have brought America's war weapons to the highest efficiency . . . surpassing Hitler's weapons despite all the vaunted scientific wizardry of the Germans and their ten year start.

At this point it is well to remember that while Germany's military might is traceable to its superiority in armament, many of the basic technological discoveries (including the airplane and the submarine) are the products of American genius. The Germans always have been aware of the military advantages of technological superiority and have forced its expansion with all their might. They knew that mobility and surprise play a decisive role in modern warfare and their design engineers were kept busy, with unique intensity, to achieve unprecedented results in fast-moving, hard-hitting fighting equipment. Our own military and industrial engineers did not go into action until it became certain that we would be involved in the conflict. But even before our country actually embarked on its Preparedness Program they were busily engaged in developing the designs of our war equipment. Tanks, planes, guns, ships and hundreds of other apparatus and machines of war were studied. Carefully selected committees of our national engineering societies were organized under the leadership of the Army Ordnance Department to serve as advisors and consultants in the development of advanced designs of tanks and other motorized equipment of war. The above mentioned "Duck" and the now famous Sherman tank are just two of the many results of these efforts.

After the Preparedness Program had officially been launched and Congress had made its initial appropriation, it was necessary to create the manufacturing blueprints from which the engines of war could be built. Because the designs of the machines of production, as well as the designs of the products themselves, determine the speed and economy with which anything can be manufactured,

This is the thirteenth of a series of editorials appearing monthly in all McGraw-Hill publications, reaching more than one and one-half million readers. They are dedicated to the purpose of telling the part that each industry is playing in the war effort and of informing the public on the magnificent war-production accomplishments of America's industries.

the capacity of our industrial system is dependent, to a considerable extent, upon the ability and ingenuity of American design engineers. Germany's military might was successfully mechanized because Germany, for more than 10 years preceding the war, was riding the wave of a world-wide technological revolution. This revolution was as far-reaching as the advent of the electric motor and the internal combustion engine. It was born of the profusion of inventions and discoveries since the last war. German design engineers took advantage of every one of these.

If we are to defeat our enemies and if we are to continue to play the leading role in the post-war world we must make better use of the new technology than do our enemies. The job is up to American product engineers who already have made tremendous strides in designing the intricate machinery of production and of war equipment. Much remains to be done however.

It has been said that the Germans have not developed one single item that can be classified as basically original, nor are there indications that any so-called "secret weapon" will henceforth be developed by them. Today the Nazis are completely outclassed by the tremendous manpower of engineering brains that is at the disposal of American industry. Although we were faced by the same fundamental problems of shortages in materials, manpower and time, our engineers not only solved these problems quickly and effectively, but they outstripped the enemy by the preponderant weight of talent which we were able to bring to bear upon our problems. As is evidenced by studies of the designs of captured German war equipment, our airplanes are faster, carry heavier loads, have superior protective armor and heavier armament. Our tanks, especially the Shermans, stand unmatched. Our tractor-mounted artillery excels theirs in fighting power. Our automotive vehicles are the envy of the world. Our battleships are supreme. Our signal and detection devices are frustrating all of our enemies' attempts to dominate the seas.

And as we approach the end of the conflict, the pattern of which already has been set, the forces that converted American industry from peace to war-production will again be brought into play, and the product engineer will continue to be the fulcrum. Our post-war industry will grow from his blueprint. Nor will his job be any less urgent, any less responsible, any less sweeping in its effects than were his efforts during the war-preparedness program.

Since the cessation of the manufacture of peace-time goods, many new materials and production techniques have been developed. Plastics, synthetic rubber and magnesium in the field of materials were relatively new and restricted in their uses when war came. So were powder metallurgy, induction heating, electrostatic heating, adhesives for joining metals and compressed resin-impregnated wood. The new possibilities in product design created by the electronic devices and applications developed during the war period virtually stun the imagination and the "atomic revolution" promises to change the entire pattern of manufacturing operations.

Never before has there been so much speculation about the future as there is today. Looking forward, who can doubt our limitless capacity to continue our industrial world leadership?

While no one can predict developments in product design in the post-war period, certain it is that they will be so vastly different and so far superior to existing designs that they will obsolete most products as we know them today. With engines of vastly superior metals, designed to burn 100 octane gasoline and built to a precision ten times greater than that of pre-war engines, our post-war automobiles will give from 40 to 60 miles to the gallon. Tires will last from forty to fifty thousand miles. The comfort and smoothness with which these cars of tomorrow will glide along are undreamed of today. Polaroid windshields will eliminate the glare of oncoming headlights and the driver will need to give but scant attention to the manipulation of his simplified gear shifts.

According to no less an authority than Igor Sikorsky, we stand on the threshold of a new air age in which the helicopter will contribute to the greatest prosperity we have ever known.

Prophecies are hard to make at a time like this but speedy house building seems to be a certainty in the world of tomorrow. Air conditioning, new methods of heating, humidifying and drying, promise to be necessities in the post-war home. Vacuum sweepers will be much lighter, less noisy and easier to manipulate. Washing-machines will be fully automatic and practically free of noise and vibration. Not only will our homes and most of the furnishings be of radically new design, but so will the factories and machines that produce them.

Only one factor can prevent the fulfillment of the dream of the product designer. His job is not accomplished over night. To convert sound ideas into production blueprints involves a great deal of time and money. The building of test models is an expensive and tedious procedure. An abundance of seed money is required to perfect the product, to develop mass-production methods and to bring it to fruition as a finished saleable product.

It is the patriotic duty of every industrial leader to hasten these developments so that the material benefits created by them may speed our progress along the road of abundance.

President, McGraw-Hill Publishing Company, Inc.

Textile World

DOUGLAS G. WOOLF, EDITOR

Preparing for a Rainy Day

AS TEXTILE MANUFACTURERS face the post-war world, they become increasingly aware that the solution of all their operating problems—personnel relations, research, product development, modernization, merchandising—depends primarily upon one factor: money. Without financial reserves, without a cushion, without "seed money," no management—however brilliant—can measure up to the demands of the next decade.

It seems silly, but it is true, that the American people still have to learn the facts of life about American industry and business. They still don't realize that it takes money to keep a business outfit going, just as it takes money to keep a family running—or a farm, or a school, or a church, or any other organization.

This ignorance, or forgetfulness, is particularly silly in view of the fact that so large a segment of our population depends upon industry for its living: not only those who work directly in industry, but those in the wholesale and retail trades which stem from industry; the farmers who draw from the purchasing power supplied by industry; the individuals and institutions whose savings are tied up in the securities of industry.

FREE ENTERPRISE cannot survive unless it has an opportunity to accumulate reserves adequate to weather the inevitable storms of inflation and deflation. This problem can be attacked from two fronts: Governmental and industrial.

On the Governmental side, the need is for a change in our taxation and depreciation policies which will encourage, rather than discourage, honest post-war reserves to protect industry and industrial workers. One possibility is allowing companies to set aside post-war reserves which will not be subject to income and excess profits taxation, nor to renegotiation. Another possibility is a revised system of depreciation allowance which will be flexible enough to recognize the rapid obsolescence in many types of equipment, and permit such equipment to be written off during its economic usefulness, even though the period may be a very short one.

There is much however, that industry can do itself. It can adopt a more realistic attitude toward its reserve funds for modernization. Depreciation reserves have meant to too many textile manufacturers merely a bookkeeping item: a sum representing an allowance under the revenue laws. The reserves too often have gone into net quick assets and thence into dividends. There is just one safe practice: to earmark such funds for the purpose for which they were intended and to make sure that they eventually serve that purpose.

Always important, this consideration is particularly vital right now when most reserve funds cannot be used for the replacement of equipment nor for the purchase of new types of equipment. In whatever the number of years that lie ahead before textile manufacturers can modernize their plants to their hearts' desire, the safe maintenance of funds for that ultimate purpose must be watched zealously.

MORE THAN THAT, it is possible now for a manufacturer to have on paper a post-war plan. Such a plan must, of course, be flexible, with allowances for the many changes which may take place in fibers, machinery and processes. However, the manufacturer can at least get the best judgment of engineering and machinery companies at this particular moment and prepare for the future. He will find that those companies are doing a lot of post-war thinking of their own and that they will be of tremendous help in a realistic approach to this whole problem.

There is, of course, the element of intelligent self-interest dominant in this type of action. Every manufacturer wants to assure for himself and his stockholders a place in the post-war sun. But there is a broader significance to it. Post-war re-employment at profitable wages depends upon just such intelligent self-interest on the part of manufacturers. In turn, the very maintenance of our free enterprise system depends upon the composite job done by industry in this respect. Carrying this thought further, the victory of the democratic nations, now assured, can be perpetuated only through the economic well-being of each country.

Thus, a textile manufacturer finds that a problem which starts out as a simple one in corporate finance becomes one of world magnitude.

Now is the time to start preparing for the rainy day.

Douglas G. Woolf

THE EDITOR SAYS

Dog-Days in Washington

IT IS NOT EASY to appraise current events in Washington. As the political pot starts to simmer, and as grievances and antagonisms, long under the surface, start to come out into the open, some observers seem to get the feeling of imminent disaster. But as the result of three recent trips to Washington, involving off-the-record talks with leaders of all branches of the Government, we get the contrary feeling that a sane and constructive process is being evolved.

True, it is happening in an unpleasant way. It is not a pretty picture when the President and the Food Administrator swap insults in a frigidly polite exchange of letters; when the Vice-President and the Secretary of Commerce call each other names; when the Treasury Department has to be practically clubbed into accepting the people's will on pay-as-you-go taxes in the form of a compromise much less sane than the original suggestion made by Ruml; when, again, the President has to be *forced* to accept the majority will in the matter of anti-strike legislation.

But at least we have at last taken certain steps long over-due: pay-as-you-go taxation; anti-strike legislation; a partial check on the use of subsidies.

But, more than these concrete results, we have achieved a different attitude. We have come out of the defeatist conviction that there is nothing anyone can do about such things, and to the realization that it is still possible to express the will of the majority, even over the high-powered opposition of minorities in the form of pressure groups.

Quite aside from political considerations, this is a healthy development. Eventually it will be as good for the party now in power as for the minority party. There was developing, not only in Washington but in the country as a whole, a considerable conviction that we couldn't win this war except as a dictatorship, and that we have to use the same methods our enemies use if we are to beat them. That conviction is losing ground, fortunately. In its place is developing the realization that we cannot possibly win this war except as a democracy—that is, if we want to look forward to post-war solvency of our present ideals.

* * *

So much for the broad picture.

On more specific matters, including several which directly affect the textile industry, there are interesting developments in the making.

Civilian Requirements: More and more, the thinking in Washington is turning toward the new approach to the question of civilian requirements: that is, away from the idea that the only solution is taking away from civilians just as much as can be squeezed out and yet maintain a bedrock standard of living, and toward the conviction that the real objective is to get for civilians as much as possible, without interfering with military and major Lend-Lease requirements. As we have previously remarked, this is a good trick if you can do it—and from our last contacts in Washington, we think that under the present set-up we can do it. It will involve some changes of course: conversion of additional mills, simplification of styles, standardization of certain types of clothing, particularly work clothing, etc. But none of these changes will even approach in seriousness the problem which faced this country before the new attack upon the civilian supply crisis was launched. It became evident that essential goods and services must be maintained if the war-production and allied programs were to be maintained. What has been needed all this time has been a carefully planned approach to that end; that is what we apparently are beginning to get.

Clothes Rationing: Despite intermittent spells of panicky buying, some of them touched off by unwise remarks from Washington itself, the conviction is growing that clothes rationing can be avoided. There is no guarantee attached to this, but the combination of a fierce distaste for clothes rationing and a determination to do everything to avoid it, which we found in the circles where the problem will be largely decided, can be taken as reasonable assurance that rationing is not in the picture so far as we can see ahead.

The Textile Outlook: The conviction grows that the post-war outlook for textiles is brighter than that for any other industry. Quite aside from the leveling-off of textile production thus far this year, and the other problems along this line discussed elsewhere in this issue, there is felt that there will be a damned-up demand for textiles which will mean an easy stride into another boom in textiles after the war, while some of the other industries with really difficult re-conversion problems facing them, may have a waiting period of adjustment. Just how well the textile industry handles the boom, and prevents its degradation into another post-war collapse, depends upon just how intelligently the industry plans now for that period.

Textile Schools: One comes away from Washington without any hope for any constructive help in the problem facing textile schools during the war period. With the prospect of the student body drying up, about the only answer one gets in Washington is: "So what?" This is regarded as merely another of the casualties of war. The fact that there will be a gap of an unknown number of years in the supply of technical men to one of the basic industries is not regarded as any worse than a great number of effects of the war.

Hail Worth Street!

Hail Ray Bell!

Worth Street is, essentially, a liaison depot between the mills and their customers. Without Worth Street, the transaction of business in cotton goods would be difficult, if not impossible.

And Worth Street means the Association of Cotton Textile Merchants of N. Y. That association is now celebrating its 25th birthday. In a broader sense, it is celebrating its silver wedding: the juncture between two groups which otherwise could not get together.

Many men have contributed to the development of that association. Their names are written on the banner of textile progress.

But one man stands today as the symbol of cotton-textile merchandising. Ray Bell, affectionately known as the Mayor of Worth Street, is that man. As president of the association, and as a man who has given unstintingly of his time to Washington agencies, Ray is a portent of the days to come when mill and market will have to work more closely together than they ever have before.

More power to Worth Street—and to Ray Bell!

Training New Employees Quickly

Comprehensive plan developed by textile mill in South in cooperation with WMC

FOR TRAINING NEW EMPLOYEES QUICKLY and for upgrading experienced workers to more responsible positions, a comprehensive plan has been developed by WMC in cooperation with one of the larger southern textile mills. Essential features of the program include: (1) use of manning tables and replacement schedules, (2) training job instructions, (3) working out job progression charts, (4) drawing up operation sheets for each job, (5) training new employees, and (6) training maintenance men and loomfixers. In setting up the plan, management and supervisory personnel of the plant met with representatives of WMC's Apprentice and Training Service and exchanged information that contributed greatly to the development and execution of the training procedures adopted. The survey included consideration of labor and production requirements.

There was little uniformity in training methods, and few potential instructors had been given the principal job instruction techniques. For this reason, development of job instructor training techniques and of a well-trained staff of instructors consumed a considerable portion of the time required for formulating the overall training plan.

A TRAINING SUPERVISOR was appointed to coordinate all the training. To provide him with first-hand information, a general training advisory council of management representatives and in-

PRODUCTION IN POUNDS IN EACH DEPARTMENT—40-HR. WORK WEEK

Process	Units in Place	40-hour Units	Pounds Produced	Pounds per 40-hour Unit	Capacity 40-hours	Average hours per wk.
Picking						
Carding						
Drawing						
Slubbing						
Spinning						
Twisting						
Spooling						
Winding						
Warping						
Warp Twisting						
Filling Twisting						
Slashing						
Beaming						
Tying-In						
Drawing-In						
Weaving						
Cloth Room						

Fig. 1a. Form (face) giving important information on departmental loads shows how shifts can be arranged so that each department can relate its overall operating time to the anticipated production; form also provides the training supervisor with training schedule information.

PRODUCTION SCHEDULE

X represents units of 25,000 lb. O represents units of 25,000 lb. above actual prod.

Department	Actual and Anticipated Production	Actual Hrs. Worked
Picking	XXXXXXXXXXXXXXXXXXXXXXXXXX000000	
Carding	XXXXXXXXXXXXXXXXXXXXX000000	
Drawing	XXXXXXXXXXXXXXXXXX00000000	
Slubbing	XXXXXXXXXXXXXXXXXX0000000000	
Spinning	XXXXXXXXXXXXXXXXXXXXXXX	
Twisting	XXXXXXXXXXXXXXXX00000000000000000	
Spooling	XXXXXXXXXXXXXXXXXXXXX00000000	
Winding	XXXXXXXXXXXXXXXXX00000000	
Warping	XXXXXXXXXXXXXXXXXXXXX00000000000	
Warp Twisting	XXXXXXXXXXXXXXXXX00000	
Filling Twisting	XXXXXXXXXXXXX0000000	
Slashing	XXXXXXXXXXXXXXXXXXXX00000000000000	
Beaming	XXXXXXXXXXXXX0000000	
Tying-In	XXXXXXXXXX000000	
Drawing-In	XXXXXXXXXXXXX00000	
Weaving	XXXXXXXXXXXXXXXXXXXXX000000000000000	
Cloth Room	XXXXXXXXXXXXXXXXXXXXX	

Fig. 1b. Form (back) showing actual and anticipated production in each department of the mill which indicates to training supervisor how training must be scheduled by each department so as to maintain or increase production, as may be required.

Training

New Employees Quickly

structors, and various departmental advisory councils were formed. Training records and grading methods were established to serve as a part of the permanent personnel department file on trainees. Recommendations also were made to provide more orderly withdrawals of workers into military service.

The first step was a survey to determine those jobs in the plant where the need for replacement was greatest and to select the jobs which are best for beginning practice and skills. Analysis of production in relation to the setting up of a plant training program and replacement schedule was done on forms shown in Figs. 1a and 1b. To facilitate planning, work stations were diagrammed and the job assigned to each station was listed.

To develop a well trained staff of teachers, methods were used similar to those outlined under "Job Instructor Training," TEXTILE WORLD, March, 1942. This training was spread to as many employees in all departments as was possible in order to speed the teaching program. Special attention was given by instructors to the introduction of trainees to their new jobs and surroundings. To assure proper induction, a check list of the informa-

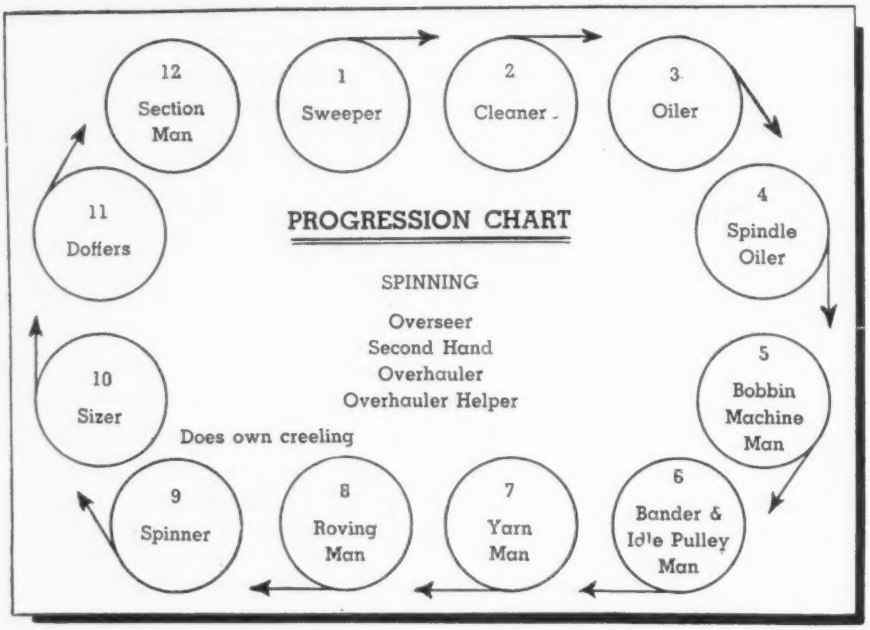


Fig. 2. This chart shows department jobs classified in the order of their difficulty. No. 1 is the beginning job, thence through Nos. 2, 3, 4, etc.

TRAINING TIME TABLE

Department Weaving Date Report Submitted 1/22/43

By Whom John Doe

Name	Loom Cleaner	Oiler	Battery Hand	Smash Hand
John Reynolds	X	X	X	X
A.C. Crittenden	X	X	10-5	10-10
Oscar Sumner	-	-	11-2	11-17
Carl Bracks	10-1	10-10	X	X
R. Bannister	10-1	10-15	11-5	11-15

Note: X means the workers can now do the job,
- means the worker doesn't need to learn the job,
10-1, 10-15, etc. are the dates the Supervisor has set for himself, when he expects to have the men able to do the jobs required.

Fig. 4. Time table of dates trainees should be ready to perform various jobs.

Fig. 3. Upgrading sequence chart for job classifications in a cotton textile plant.

Carding:
Section Hand
↑ Card Grinder
↑ Card Tender
↑ Card Stopper

Slubber Hand and Fly Frame Tender
↑ Can Turner
↑ Transfer Hand

Draw Frame Tender
↑ Oiler

Spinning:
Fixer and Section Man
↑ Doffer
↑ Sizer
↑ Spinner
↑ Roving Man
↑ Yarn Man
↑ Band and Idle Pul. Man
↑ Spindle Oiler
↑ Oiler
↑ Cleaner

Spooling:
Section Man
↑ Section Man Helper
↑ Spooler Hand
↑ Yarn Man
↑ Piece Rocker
↑ Yarn Cleaner
↑ Tailing Machine Hand

Warp Twisting, Warping and Winding:
Section Man
↑ Twister Tender
↑ Twister Creeler
↑ Twister Doffer
↑ Oiler
↑ Reel Hand

Warper Tender
↑ Warper Helper
↑ Warper Creeler

Winder Tender
↑ Winder Helper

Filling Twisting:
Section Man
↑ Doffer
↑ Creeler
↑ Filling Helper

Slashing:
Section Man
↑ Slasher Tender
↑ Size Man
↑ Slasher Helper
↑ Beam Man

Beaming:
Beamer Tender
↑ Beamer Helper

Drawing-in and Tying-in
Section Man
↑ Drawing-in Hand
↑ Drawing-in Helper

Tying-in Operator
↑ Tying-in Helper

Weaving:
Loom Fixer
↑ Weaver
↑ Tying-on Warps
↑ Laying-up Warps
↑ Pick-out Hand
↑ Smash Hand
↑ Battery Hand
↑ Taking-off Cloth
↑ Filling Hauler
↑ Oiler
↑ Cloth Hauler
↑ Loom Blower
↑ Loom Cleaner
↑ Overhead Cleaner

Baling, Trading, Burling:
Folder Hand
↑ Brander and Sewer
↑ Press Booker
↑ Head Pressman
↑ Press Helper
↑ Baler and Sewer
↑ Grader
↑ Remnant Hand
↑ Calender Hand
↑ Burler

tion given a new employee was used.

Job progression charts were drawn up showing the sequence of job difficulties in all divisions of the mill, as shown in the chart for the spinning division, Fig. 2. Upgrading of workers to fill higher-skilled jobs as they became available was planned and jobs were arranged in the order of progression on a chart, Fig. 3. Also, training time tables were set up to give advance information to the production department on the approximate time trainees would be available for full service on a given job. Suggested forms for the time tables are shown in Fig. 4.

JOB DESCRIPTIONS were drawn up which were comprehensive enough to define a job, giving the sphere of activity and skills required, and providing sufficient information about each job so the description could be used by the supervisor and training forces as a basis of developing a training schedule. An adequate list of job descriptions also justified some form of job rotation within a division of the mill. Job descriptions were not made extremely accurate, as they were used mostly as a "fence" around a job for people with only a passing knowledge of a job. A brief job description was given on the heading of each operation sheet.

A training schedule based on the information revealed from job descriptions was prepared, listing all the jobs to be taught, breaking them down into their component parts, and providing the necessary job knowledge and teaching sequence. If no required sequence existed between jobs, they were arranged in the order of their difficulty beginning with the jobs requiring the least amount of skill.

OPERATION SHEETS for each job similar to the one in Fig. 6 were prepared. To provide complete information, department, operation, job description, and training time were listed on the heading. Based on the operation sheets it was assumed that the operations listed would represent the teaching units for that job. Not more than 8 or 10 new ideas were included in a teaching unit in order to prevent confusion of the learner. Each operation listed was broken down into steps, and each step listed in the proper sequence for performance. In using the sheets for instructing, teachers divided the whole operation into groups of steps, and each step was based on material covered by the learners previous experience, so that overlapping of training would not result. The instructor was then ready to proceed, keeping in mind that the trainee must master each group before proceeding to the next. Forms.

TRAINING RECORD

Department _____ Job Classification _____

Name of Trainee _____ Age _____

Previous Experience _____ Sex _____

Date Training Began _____ Finished _____ Weeks Required _____

Grade (Quality of Work) _____ Instructor _____

Remarks _____

Week Ending	Hours Worked	Days Out No Report	Part Job Assigned	Instructor's Report			
				Interest	Cooperation	Ability	Effort
1.							
2.							
3.							
4.							
23.							
24.							
25.							
26.							

Remarks: _____

Fig. 5a. Sheet (face) used for grading a trainee's progress and response to training.

Name of Trainee _____

	Week Ending							Week Ending						
	M	T	W	T	F	S	Total	M	T	W	T	F	S	Total
Hours Worked														
Job Assigned														
Interest														
Cooperation														
Ability														
Effort														
	Week Ending							Week Ending						
	M	T	W	T	F	S	Total	M	T	W	T	F	S	Total
Hours Worked														
Job Assigned														
	Week Ending							Week Ending						
	M	T	W	T	F	S	Total	M	T	W	T	F	S	Total
Hours Worked														
Job Assigned														
	Week Ending							Week Ending						
	M	T	W	T	F	S	Total	M	T	W	T	F	S	Total
Hours Worked														
Job Assigned														
	Week Ending							Week Ending						
	M	T	W	T	F	S	Total	M	T	W	T	F	S	Total
Hours Worked														
Job Assigned														

(8) Eight hours worked *(R) Sent out to rest*
(S) Out Sick *(O) Out – no report*

Fig. 5b. Sheet (back) used for grading a trainee's progress and response to training.

Fig. 5, were prepared for recording the progress of trainees and are kept in a permanent office file. These forms include a suggested grading scheme which was also used in recording the progress of trainee workers.

Pre-employment training of high-school students was conducted to form a reserve of new workers that could take jobs in the mill with little additional training. For those students desiring to enter the mill, practice machines and instructors were provided at the school. Training away from the productive job required more time than training on the job; however, fundamental information and minimum practice in some basic job operations were given. In all courses of this nature the training followed the outline of actual work on the job. Each instructor had some practical knowledge of the job he taught, and worked closely with the plant training supervisor. Many of the operations of the teaching unit were speeded up by having trainees study supplementary subjects, such as cotton mill mathematics, cloth calculations, safety rules, and other subjects that touched upon his job.

APPRENTICESHIP TRAINING was conducted for a limited number of jobs. Relatively few cotton-mill jobs require all-around skill that classifies them as apprenticable. Among those that can be considered apprenticable are the jobs of general maintenance, loomfixing, second hand, and supervisor. Apprentice training was given in the jobs of general maintenance and loomfixing, and charts were prepared listing the skills to be acquired and the approximate time that should be allowed for training. Fig. 7 shows the chart prepared for the maintenance apprentice. Sufficient time was allowed for the apprentice to reach a high degree of skill on each operation.

In conducting apprenticeship training, careful consideration was given to the selection of apprentices, the term of training, the supervision of apprentices, related instruction, work processes, apprentice incentives and examinations. The apprenticeship training was sponsored and supervised by the training advisory council in the same manner that it functioned on other matters of training.

Visual-aid devices which were considered in putting over the training jobs and for the general education of the worker, included such things as movie or voca-film on safety practices at home or on the job, fundamental manufacturing processes in textiles, mill short cuts and trade kinks, and the history of textile manufacturing. Other visual aids suggested were cut-away sections of machine models; glass inclosed samples of defects in cloth; case histories and illustrations of modern streamlined production methods. Adequate textbook and reference materials for supplementary reading were made available.

This plan was tailor made for one plant. Therefore, it must be modified for other mills to suit local conditions and requirements.

OPERATION SHEET

DEPARTMENT: *Carding* TRAINING TIME:
OPERATION: *Card Tender* *Approx: 6 weeks*

JOB DESCRIPTION: Operation of a card (carding machine) which converts lap into sliver, cleaning and straightening the cotton fiber in the process; under close supervision of card grinder.

STEPS AND NECESSARY INFORMATION

1. *Lay full laps when old laps run out; place lap-rods on floor between the cards.*
   a. Run old lap out as near as possible before laying new lap. Do not let the lump at the tail go through card.
   b. Lap hauler removes lap rods. Safety precaution: Do not leave lap rods in dangerous position.
   c. After a line of laps has been laid check back and see if there are any laps splitting or running crooked. If so correct them.
   d. Place all lap waste in waste can.

   } Teaching Unit

2. *Piece up all ends in front.*
   a. Observe front ends regularly between other jobs so that ends can be constantly kept up.
   b. Place *all* waste in waste cans.
3. *Secure empty cans, doff full ones, and haul full cans to breaker drawing.*
   a. Empty cans can be secured from slubbers or drawing frames.
   b. Be sure cans are empty.
4. *Assist card grinder to move grinding rolls.*
   a. Under direction of card grinder.
5. *Clean fronts twice each shift.*
   a. Use piece of strip waste. Dirty fronts cause ends to come down.
6. *Mop card clean (once each week).*
   a. At time convenient to operator.
7. *Sweep beneath card.*
   a. Front and back—once each shift. Put waste in boxes and push full boxes to end of line of cards.
8. *Take down strips (just before stripping time); haul to end of card line.*
   a. Strip off waste into box.
9. *Clean scavenger (once each shift).*
   a. If scavenger roll gets too large, it will not stay in place.

Fig 6. An operation sheet which can be used for planning the learner's training.

Maintenance Apprenticeship
MECHANICAL

Tool Room Clerk	6 Weeks
Drill Press Work	4 Weeks
Hack Saw	4 Weeks
Lathe Work—Roughing Steel	3 Weeks
Lathe Work—Semi-Finishing	8 Weeks
Lathe Work—Finishing	8 Weeks
Lathe Work—Cast Iron	4 Weeks
Key Seating	1 Week
Gear Cutting—Spur	4 Weeks
Gear Cutting—Worm	2 Weeks
Gear Cutting—Spiral	6 Weeks
Gear Cutting—Bevel	6 Weeks
Shaper Work	2 Weeks
Milling Machine Work	8 Weeks
Reading Mechanical Drawings	2 Weeks
Operation & Care of Pumps	4 Weeks
Operation & Care of Air Compressors	6 Weeks
Instruction & Practice in Humidification	10 Weeks
Plumbing	6 Weeks
Underground Piping	4 Weeks
Steam Fitting	8 Weeks
Operation and Care of Boilers	8 Weeks
Total Apprenticeship	**114 Weeks**

Fig. 7. Training time the maintenance apprentice is allowed for each job.

Streamlined *Training*

Here a practical mill man tells in his own words the story of how the WMC's Job Instructor Training Program has helped relieve a serious shortage of skilled help at his mill. Very little editing was done on the article so that the story would reflect a personal experience with and an estimate of the worth of these streamlined teaching methods.

"THE CRYING NEED right now," said our general manager, "is a quick-working, sure-fire method of training operatives."

Realizing that an annual labor turnover of 100% now prevails in most textile organizations, there seemed to be no doubt whatever that this executive had put his finger on the current Achilles' heel of industry. There was a time when an overseer or a superintendent knew the name, family status and financial condition of every employee under his supervision. He could call John, Bill or Henry, and never misfire, but you are lucky now if you can find a second hand who can call the first name of every worker in his department on just one shift. Before you can associate the names and faces of the flood of new workers, they move on to some other job—and you are on your way to the personnel department with a plea for new faces, and if you are lucky you get new "faces." Behind the new face there is often little else. It's either a woman or a child, wanting to do a man's job, or a 4F rabbit hunter. The experience is painful, but you've got to make the best of it. These are practically the only sources of labor now, and in order to continue manufacturing cotton goods, you must first change this labor into skilled operatives.

Almost as if in answer to someone's prayer, along came a training-course representative of the War Manpower Commission. This one was not trying to make electrical engineers out of roving layers in three easy lessons. He had with him a little card, measuring about four by two inches, printed on both sides in readable type. And the few brief sentences contained on that card held the potentialities of magic. Properly speaking, this business could hardly be called a training course it was so logical and simple. Sponsored by the Training Within Industry Division of the WMC, it is carried out by our State Vocational Training School, and tagged Job Instructor Training.

The object of JIT is to teach the key workers *how to teach a job.* The TWI representative goes to an industrial plant upon request, and outlines the plan to the management, which accepts or rejects the program as it sees fit. Classes are formed from operatives and supervisors in the plant desiring the training. These classes meet five days a week, two hours per session—a total of ten hours.

The first session is taken up by the TWI representative, who explains the training course, and presents the material on the "magic" card. Since there doesn't seem to be a copyright on the material used, it might be worthwhile to pass on to you the "thunder" evolved by TWI. One side of the card is shown at left in illustration.

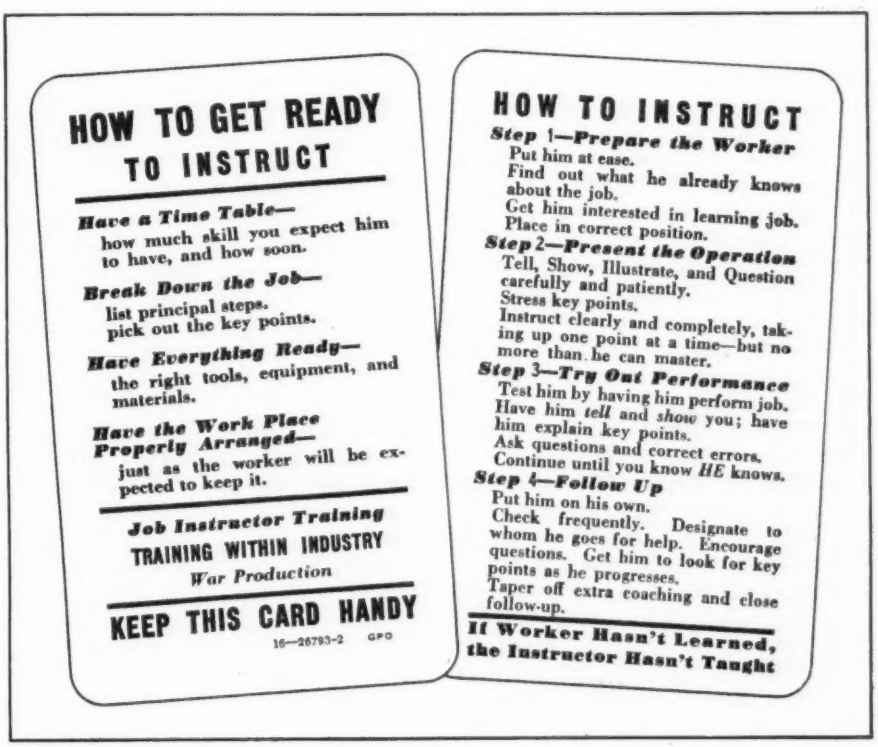
Those four steps are preparatory. The job instructor—in order to save time, trouble and confusion, not only for the learner he is to teach, but also for himself—should follow those four steps rigorously. These are merely for setting the scene, so to speak. But the "magic" of it is that it not only sets the scene, but it also puts the teacher in a business-like mental attitude. All the above is accomplished *before* the learner appears. Upon the advent of the learner, the other side of the card is used, shown at right in illustration.

There you have it. That's the "thunder." But the "lightning" comes from instructing the instructors. The magic lies in standardizing the method of teaching learners by skillfully breaking down the jobs and instilling the orderly procedure outlined above into the operative-instructors.

A red-faced loomfixer, or a jittery spinner, may be frightened half to death when he or she gets up before the group taking this ten-hour unit of training, and attempts to *teach another worker an operation.* But when the ordeal is over, there is a definite method of training established in his mind.

Dale Carnegie said in effect that "the quickest, surest way to instill self-confidence into a person is to train him to think on his feet."

When you get slubber tenders and weavers and fixers to thinking on their feet *about their jobs and how to teach them to others,* mister, you've got something. You won't be quite so hopelessly discouraged when you look over the newly hired women, kids and 4F's.


HOW TO GET READY TO INSTRUCT
Have a Time Table—
how much skill you expect him to have, and how soon.
Break Down the Job—
list principal steps.
pick out the key points.
Have Everything Ready—
the right tools, equipment, and materials.
Have the Work Place Properly Arranged—
just as the worker will be expected to keep it.
Job Instructor Training
TRAINING WITHIN INDUSTRY
War Production
KEEP THIS CARD HANDY
16—26793-2 GPO
HOW TO INSTRUCT
Step 1—Prepare the Worker
Put him at ease.
Find out what he already knows about the job.
Get him interested in learning job.
Place in correct position.
Step 2—Present the Operation
Tell, Show, Illustrate, and Question carefully and patiently.
Stress key points.
Instruct clearly and completely, taking up one point at a time—but no more than he can master.
Step 3—Try Out Performance
Test him by having him perform job.
Have him tell and show you; have him explain key points.
Ask questions and correct errors.
Continue until you know HE knows.
Step 4—Follow Up
Put him on his own.
Check frequently. Designate to whom he goes for help. Encourage questions. Get him to look for key points as he progresses.
Taper off extra coaching and close follow-up.
If Worker Hasn't Learned, the Instructor Hasn't Taught

Handy card carried by the job instructors. One side is on "How to Get Ready to Instruct." Reverse of the card covers "How to Instruct"

Manpower Key to Output Increase

Washington speculates on chances of 10% rise in cottons—Training suggested

By GLADYS MONTGOMERY

It is interesting to note from the conclusion of the following story from our Washington Bureau that utilization of the Government's Training-Within-Industry Courses is suggested as one way in which to achieve the goal of a 10% increase in cotton-goods production in 1943, over 1942. In the pages, immediately preceding this story are two articles on training—one of them dealing specifically with the use of the Training-Within-Industry program.—*Editor.*

WASHINGTON, D. C.

OPINION IN WASHINGTON disagrees on the cotton goods industry's ability to meet WPB's requested 10% increase in production this year over 1942. It seems clear, on the basis of production figures and reports on manpower and facilities, that the industry is pretty near its peak, and that any substantial additional production must result from expedients.

Frank L. Walton, director of the Textile Division of WPB, takes an optimistic view. "It is expected that yarn and fabric production will continue to go up in 1943," he says, "WPB is prepared to assist in every way possible to increase this production. Carded yarn output for the first three months of this year was 204,279,000 lb., a 12% gain over the 182,354,000 lb. turned out in the comparable quarter of last year. Combed yarn output jumped from 69,917,000 lb. in the first quarter last year to 73,377,000 lb. this year—a gain of 5½%."

Not only do these figures reflect the excellent cooperation of the industry, Mr. Walton declares, but they disprove reports purporting to show a drastic decline in cotton yarn production. He states that WPB is willing to work with any mill faced with loss of production and also to aid in increasing production wherever possible. However, it will be almost impossible for a mill to increase production later if the mill decreases output now. The yarn figures are presumably sales yarn only.

Cotton fabric production during the first quarter of this year was 2,857,000,000 linear yd., compared with 2,830,000,000 yd. in the same period last year, according to a statement by Thomas M. Bancroft, chief of the cotton branch of the Textile Division. This is an increase of 27,000,000 linear yd.

Other interested agencies have made surveys of the cotton goods outlook and they point out that the first quarter increase is less than 1%. They doubt the ability of the industry to achieve the 10% gain. The opinion is expressed that the slow increase in production is due to such factors as manpower problems, and the negative attitude of some manufacturers toward expanding production with the limitations which price ceilings and renegotiation requirements have made on profits. In some cases, also, difficulties have been met in getting yarn and equipment.

THE WAR MANPOWER COMMISSION has recently completed a study of conditions in 585 cotton spinning and weaving plants. It was found that on March 1, 1943, the total employment was approximately 507,000—less than 1% above the same month of 1942. The northern branch of the industry reported a shortage in its 1942 level by about 10%, while the southern branch, spread along the inland portions of the South Atlantic and Gulf States, expanded its work forces sufficiently to counter-balance northern losses. In March, 1943, the survey shows that most of the southern mills were finding adequate supplies of unskilled workers at the gate. In many areas, particularly parts of South Carolina where surplus workers are reported in communities, a large potential supply of workers is available among housewives, some of whom have textile experience.

Reporting mills anticipated an over-all net increase in total employment of less than 2% by September, 1943. Over half these spinning and weaving plants reporting to WMC indicated that the size of their work force would remain constant. Changes will be concentrated mostly in northern mills which are understaffed. At least a net increase of 5,000 workers will be needed by New England reporting mills by September.

While labor supply does not represent an over-all serious drawback, manpower problems such as excessive turnover, absenteeism, low level of productivity, poor utilization of labor and critical vacancies were found to afford the outstanding cause in lag in production. WMC goes on to explain that there as been a drastic change in the composition of the industry's work force, which now embodies a large ratio of marginal workers, whose limited productivity is reflected in the lagging output of the industry.

The survey shows that the average monthly separation rate for the period January-February, 1943, was slightly more than 7%. While this average rate is not higher than that for manufacturing as a whole, it is considered above the rate for practically all the major war industries. WMC finds that a great many of the separations were due to "floating" among mills rather than to transfers to other war industries. An example was cited in which some workers had been rehired by the same mill as many as three times in 60 days.

Most of the separations were voluntary "quits," due to dissatisfaction over wages, the study revealed. Most of them were among third-shift workers. Some employers find it works out well to have two long shifts with opportunity for premium earnings; others pay a third-shift bonus. The survey acknowledges the seriousness of absenteeism but states that adequate information as to its cause is not available.

The WMC concluded its report by urging more training courses for workers and more use of Government training courses. Practically all employers reported that some training was being conducted, but it usually was minimum on-the-job instruction. A few firms said that they were employing the maximum number of trainees permitted under the Fair Labor Standards Act. Although relatively few employers were making use of assistance available from Government agencies, those who did were gratified by results. One employer in the South reported that its Training-Within-Industry graduates have been able to prepare inexperienced workers for jobs as spinners in a 30-hour course plus 10 weeks on the job. Such training often took as much as a year with less progressive methods. Less than 25 mills reported that they were using the training programs of WMC, although this assistance is available upon request.

Textile Mill Activity Levels Off

For first time in over four years, rise is checked—Cotton-textile output off

By DOUGLAS G. WOOLF

FOR THE FIRST TIME in more than four years, TEXTILE WORLD's index of textile mill activity has levelled off. After four consecutive years of record-breaking performance, during which the index advanced from 103 in 1938 to 198 in 1942, this advance has been arrested. On the basis of still incomplete statistics, it appears that textile activity during the first half of this year was approximately the same as that for the first half of 1942, and possibly very slightly lower. The tentative estimate for the 1943 index is 197 as against 198 in 1942, but this may be revised slightly when complete figures are in. The revision will be likely to be downward rather than upward.

There is of course nothing alarming in this picture. Everyone who has followed the events of the last four years has known that there is a limit to everything, including the ability of textile mills to increase their production. In January we stated in these columns: "The textile industry will continue to be one of the brightest spots in the industrial picture because it supplies both a vitally essential military need and a vitally essential civilian need. The industry's production curve will continue to be high, but it may stop making records." Again, in May of this year, we stated: "The textile industry is still in a boom. There is no collapse in sight. There are, however, so many conflicting factors involving the balance among various types of demand for textiles that the wise manufacturer will keep his mind and organization continually alert to signs of change. In the midst of all-out production—which must be continued as long as a single soldier needs any article of apparel or textile equipment—the industry should be prepared for changes which will make it necessary to continue to make money on a smaller volume of business."

For the industry as a whole, that period has not arrived. The decline is negligible; the industry is still going full tilt. Furthermore, for the post-war outlook there is every indication of another bulge to supply Lend-Lease and other demands from a denuded world. However, there is a possibility that between now and then there will be a further, though not serious, falling off in textile mill activity.

THE DROP in TEXTILE WORLD's index of textile mill activity during the first half of 1943 as against the corresponding period of last year, was due entirely to the cotton division. In fact, wool and rayon consumption increased slightly. Again, the drop in cotton consumption, as is pointed out in the despatch from Washington on the opposite page, is due primarily to manpower shortage, and secondarily to the inhibiting effect of price control.

The fact that the Textile Division of the War Production Board reported gains in cotton yarn and cloth output during the first quarter of this year as against the first quarter of last year, whereas actually cotton consumption figures showed a slight decline for the first three months of this year, can possibly be explained by the fact that WPB's yarn figures are presumably for sales yarn only; and also that an increase in production of linear yards, despite decreased cotton consumption, could quite possibly be due to the fact that demand had shifted somewhat from heavy industrial fabrics and that the average weight per yard of fabric produced in the first quarter of this year might have been less than that made in the first quarter of 1942. In any event, the difference between the WPB report and the cotton consumption figures is not serious enough to warrant careful analysis. The main fact protrudes that, instead of there being a possibility of a 10% increase in production of cotton goods this year, over last year, as requested by WPB, there may very possibly be an actual decline before the year is over.

TEXTILE WORLD'S Textile Mill Activity Index

1923-25 average = 100

1929	115	1936	124
1930	89	1937	125
1931	93	1938	103
1932	83	1939	132
1933	104	1940	142
1934	90	1941	188
1935	105	1942	198
1943 (first half)	197*		

**Subject to revision.*

AN INTERESTING VIEWPOINT on this question of decline in cotton-textile production was furnished recently by one of the large companies in the market. It stated:

"The demand for both goods and yarn continues well ahead of production in our primary market. We don't believe the trade generally realizes the way that production has been dropping off recently. Many mills that have been running three shifts find now that they have insufficient help to continue on over two shifts due to the scarcity of labor.

"Frankly, we can see little relief. In fact, it looks like we are heading for a further drop in production during the next few months. Time-and-a-half and double-time are practically out, with the exception of a few plants, as a result of unsatisfactory prices. . . .

"The OPA continues to hamper production by their inflexible attitude on prices, and it looks as though a complete reorganization of this division is necessary. It is fundamentally wrong to put a price on the finished product and disregard the price of the raw material as well as other increased costs such as labor and additional overhead due to lower production. This division has had a complete distrust of the businessman since its inception, and was built up with theorists, lawyers, etc. Therefore, their point of view from the beginning has been wrong. Furthermore, they have carried the price fixing to such minute detail that it is breaking down from its own weight.

"We still believe that a complete inventory of Government supplies should be taken, and if this is done, it is possible that the situation could be eased up. Some constructions would probably be in excess of actual needs while others might be short. We saw many changes and mistakes in figures and unbalanced inventories during the last war, and the same condition must be more or less true today."

Employee-Morale Boosters

WPB Absenteeism Guidebook

A guidebook or manual titled "Guide for Plant Labor Management Production Committees" defining absenteeism, its causes and remedies was issued recently to Labor Management War Production Drive Committees in more than 2000 war plants by the War Production Drive Headquarters of WPB in Washington. The pamphlet will be sent to other war plants upon request.

Donald M. Nelson in commenting on the guidebook said, "We feel that it is important to get the guidebook on absenteeism into the hands of labor and management people who can use it effectively to help solve a vital production problem. This guidebook has a definite value because it indicates a positive and constructive approach to absenteeism and suggests a variety of practical ways of combating it."

Women Workers at Bibb

Women at Bibb Mfg. Co., Columbus, Ga., are taking over jobs formerly run by men, and demonstrating ability and efficiency. Suggestions for improvements in operating methods and conservation of material have come from them.

Training Learners Outside the Mill

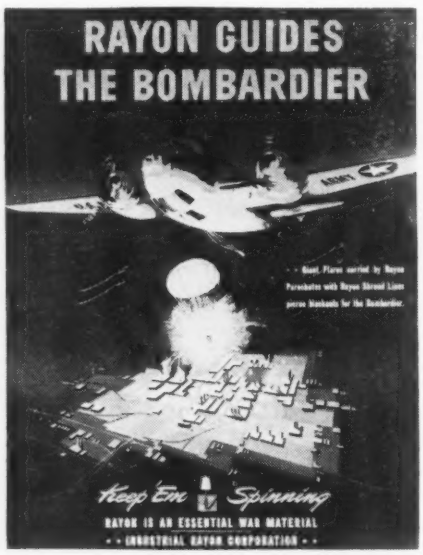
A new experiment has been recently put into practice says "Training Tips" of Riverside & Dan River Cotton Mills, whereby, each week, approximately ten weaver learners and ten spinning-room learners receive their first four or five days of instruction at the old No. 1 Mill Building. Danville Textile School instructors are doing the training.

These new employees are paid the regular learner wage. Training includes instruction in actual operation of machines, and such subjects as wages, shift hours, safety, regulations the worker needs to know the first few days at the plant, and discussion of key points of the machine, and emphasis on importance of working regularly.

The several advantages of the plan are varied. Learner is trained in a department whose sole objective is training rather than production. It is during the first week that the learner is of the least value to the department, will make the most bad work and waste, and is most easily discouraged. Also, because of conditions permitting freer conversation, the learner should be able to learn more about mill regulations, safety rules, the importance of his job, of working regularly, proper clothing and work tools, company recreational activities, and the importance of the plant product in the War Effort.

Pacific's Conservation Poster

Pacific Mills is distributing to retail stores an inspirational poster to help the war effort. It shows a residential street scene with this display copy: "This Too Is America At War. Resourceful in the face of shortages, America fights with determination on the home front. Throughout this store, information is available to help you conserve for Victory."



Industrial Rayon Corp. has been building up employee morale by the display of "Rayon War Use" posters like this in its three plants, which are now producing high tenacity yarns for tire cord, parachute fabrics, tow targets, paulins, and wire insulation, as well as yarns for linings and essential civilian clothing.

War Bond for Best Suggestion

John W. Crawford, general manager, Tilton Worsted Mills, Inc., in Laconia, N. H., has adopted a suggestion box plan in the mill under which a $25 war bond is awarded monthly to the employee who offers the best suggestion to improve the quality of the concern's products and increase their output.

Systematic Plans Cut Absenteeism

War plants without systematic plans for reducing the causes of absenteeism have nearly twice as high a rate of job absences as those which do have such programs, the Office of War Information has reported. Seven plants with systematic programs were found to have a job absence rate averaging 4.4% a month. Nine other war plants, with hit-or-miss methods, had an absence rate of 8.1%.

Analysis of absence records of 1800 workers—100 in each of the 18 plants—showed:

1. Married women are absent most. Next come single men, then single women. Married men are absent least.

2. Those who had been on the job between three months and two years were most frequently absent. Next came those with less than three months. Least absent were the old hands with more than two years experience.

3. New residents of a community are more often absent from the job than regular residents.

4. Workers who object to plant health or safety conditions, or lunch arrangements, or promotional policy, are more frequently absent than satisfied workers.

More than half of the workers had specific suggestions in answer to the question what can be done to cut down absenteeism. The most frequent suggestions were for re-arrangement of hours of work and not granting overtime pay for the week in which the worker is absent. Other suggestions: improve plant conditions, community conditions, wages, and productive efficiency, educate employes, reward regular attendance, discharge the absentees and put them in the army. Typical

NORTH STAR Woolen Mills employees at the Minneapolis plant recently heard first-hand reports of the original North Africa landing operations, as related by Coast Guardsmen George Haboush, seaman 1st class, and George Klemchuk, machinist's mate 2nd class. Both men agreed that a comfortable bed and warm blankets feel great to a cold and tired fighting man. After the Coast Guardsmen's talk to over 400 North Star employees, Leona Mae Sharbonno and Leona Almer of North Star presented each of the men with new North Star blankets. Shown here left to right are Miss Sharbonno, Haboush, Klemchuk and Miss Almer.

proposals for rearrangement of hours of work showed the workers were concerned with reducing long hours, or concentrating work so they will have afternoons or days to themselves.

Food Service Helps Morale

Hugh Comer, executive vice-president, Avondale Mills, Sylacauga, Ala., has written the Food Distribution Administration, Washington, D. C., that a 10% increase in production had been noted because of improved morale in the first two weeks after the food service was set up at the mills as recommended by the Nutrition in Industry Division.

Selects 70 Morale-Building Posters

The National Association of Manufacturers has issued to its 9,000 members a "Posters-for-Production" booklet containing reproductions of 70 morale-building posters selected as "truly representative of our war effort." The posters were chosen from approximately 1,000 submitted by 700 companies.

New Employees' Handbook

The Lincoln Electric Co., Cleveland, Ohio, has just issued an Employees' Handbook for the members of its organization. Among the many features emphasized in the handbook are the Advisory Board representing the employees; the suggestion system; and the employees' stock purchase plan.

Men and Women in Town Help in Mill

Riverside & Dan River Cotton Mills have asked housewives, high school children, office workers, and men and women in Danville to work a half-shift in the mills to release mill workers to more important tasks. Some of the wives of supervisors, and men and girls from the mill office are also taking a half-shift in the mill.

Courses in Safety Engineering

Courses in safety engineering have been arranged for Anderson, Greenville, Easley, Spartanburg, Laurens and Seneca, all in South Carolina, by S. B. Earle, dean of engineering of Clemson College. The courses are being offered as part of the war training program of the U. S. Office of Education. The primary purpose is to conserve manpower through promotion of safe working practices in industries manufacturing war materials. The training prepares men for supervisory positions in their organizations and for the conduct of plant safety programs. The South Carolina committee for preservation of manpower in war industries, of which A. Stanley Llewellyn, of Inman, S. C., an official of the Inman Mills, is chairman, is working with Clemson College in the development of the classes.

Mill Spinners 100% Record

A group of spinners at Osprey Mill of Bibb Mfg. Co., Porterdale, Ga., were 100% on the job every day and 100% signed up for war bonds in a recent weekly report. B. D. Cain, Jr., superintendent, said, "Much of the credit for this accomplishment goes to E. A. Ponder, third hand. He has now made his goal two weeks without an absentee. Also he has challenged other spinning-room third-hands to better his record."

No Lost-Time Accident Record Celebrated

In celebration of breaking a world's record for textile finishing plants by completing 6 million man hours, or more than five years, without a lost-time accident, Sayles-Biltmore Bleacheries, Inc., Asheville, N. C., was host at Grove Park Inn to more than 500 employees and guests at a dinner-dance.

Help for Help-Wanted Ads

Parish & Phillips, classified advertising counselors, Miami, Fla., have published an "Employment Advertising Encyclopedia." This 36-page booklet contains more than 600 timely phrases to aid in the writing of more productive Help-Wanted advertising and is priced at $1 a copy. The authors assert that "Thousands of capable people are still reading the employment columns and employers are still obtaining help through intelligently written and thoroughly descriptive copy."

Role of Textiles in Camouflage

Data which will help mill men to meet requirements of Army and Marine Corps

CAMOUFLAGE has as its purpose the concealment from the enemy of troops, equipment, buildings, airports, and other establishments. The aim of camouflage may be complete concealment, reduction of visibility, change of apparent identity or dimensions of the object, or bewilderment through use of dummy or decoy targets. Camouflage may be designed for concealment from enemy observers on the ground, on surface vessels, or from aircraft. In modern camouflage, textiles are playing an increasingly important role. This role is not a static one. Through experiments and experience, rapid advances are being made in the art and science of camouflage; and the textile industry is constantly being called upon to furnish new and better camouflage materials.

The Army Corps of Engineers and the Army Quartermaster Corps are by far the largest purchasers of textiles used for camouflage. Smaller quantities of textiles of similar types are procured by the Marine Corps, and some are purchased by the Navy.

With the exception of certain fabrics for clothing and tents, the Corps of Engineers procures practically all camouflage materials for all branches of the Army. The textiles required are of two general classes: (1) impregnated cotton osnaburg and burlap, and (2) camouflage nets.

The osnaburg and burlap employed for camouflage purposes are covered by Army Tentative Specification T-1212A. Essentially, these fabrics consist of osnaburg conforming to Army Specification 6-280 or burlap conforming to Federal Specification COC-B-811, impregnated with a camouflage compound, cut into strips 2 in. wide, and wound into 300-ft. rolls. The fabric must be mildew resistant, not susceptible to spontaneous combustion, and the colors must be durable when exposed to weather. The camouflage compounds consist of suitable pigments and binders to which flameproofing and mildewproofing agents have, or can be, added. There are eleven standard camouflage colors; namely, light green, dark green, sand, field drab, earth brown, earth yellow, loam, earth red, olive drab, black, and white. These are covered in Army Tentative Specification T-1213-B.

Signal Corps Photo

Fig. 1. Textiles at war. Camouflaged tank destroyer, self-propelled, mounting a 105 mm. gun, is protected in terrain of medium cover by a garnished fish net, 36 ft. by 44 ft. Two-inch strips of osnaburg are used for garnishing.

TO AFFORD CONCEALMENT against infra-red photography, it is essential in some instances that the pigments employed be infra-red reflecting. Methods for testing for infra-red reflectance are given in Army Specification 100-12; this specification is of more importance to manufacturers of camouflage colors than to textile men. The fabric is thoroughly impregnated with the compound and dried. It is essential to obtain good penetration and flexibility and freedom from tackiness and gloss.

Camouflage strips cut into 5-ft. lengths are used to make garnished nettings. These nettings, which are of several types—fish nets, wire nets, etc. —are employed for overhead concealment. They may be erected on wood or steel framework to cover parking areas; ammunition, fuel, and supply dumps; buildings; camps; or other establishments. The garnish strips are woven into the mesh in definite patterns and in various seasonal color combinations.

The Corps of Engineers has purchased garnished nets and nets which can be garnished in the field. Garnished twine fish nets are covered by Army Tentative Specification T-1220. The type of twine fish netting is described in Army Tentative Specification T-1534. This is a commercial netting with meshes 2¼ in. on the bar, made from No. 18 cotton seine twine conforming to Federal Specification TT-881a. Woven cotton tape 1⅛ in. wide conforming to Federal Specification DDD-T-86 (with exceptions noted in T-1534) is employed for reinforcing the edges of the nets. Sizes of nets procured range from 15x15 ft. to 36x44 ft. Camouflage of this type in field use is shown in Fig. 1. The nets are treated with a preservative consisting of a combination of copper naphthenate and tar, sufficient tar being employed to impart a slate-gray color. Treated nets must contain not less than 0.5% of copper and must not show a gain in weight when dry of more than 20% over that of the untreated net.

Materials other than burlap or osnaburg can be employed for garnishing. For example, one material which is being experimented with is a synthetic fiber derived from kelp or seaweed.

Shrimp net in four different types is employed in large quantities for camouflage purposes—mainly as drapes to cover and conceal tanks, trucks, guns, etc. These four types are made from: (1 raschel, tricot, or other warp knit

fabrics; (2) torchon fabrics; (3) Levers lace fabrics, and (4) Nottingham lace fabric. Requirements for shrimp nets are given in Army Tentative Specification T-1669. Sizes of nets range generally from 22x22 ft. to 45x45 ft. Edges are reinforced with woven braids or knitted cotton tape 1½ in. wide. The nets are treated to meet the requirements of Specification T-1212A mentioned above and must be flame resistant. They are colored to a solid shade of Olive Drab No. 9, Sand No. 3, or other specified camouflage colors given in Specification T-1213 and meeting the infra-red reflectance requirements of Specification 100-12.

Weight of finished net must not be more than 55% over that of the original net. The compounds are available for application from solvent solutions and from water-in-oil emulsions. They can be applied in a variety of ways depending on the equipment available. After impregnation, the fabric is dried, precautions being taken to compensate for shrinkage of the net and to remove the solvent vapors if the compound was applied from a solvent solution.

Due to the size of camouflage nets (up to 45x45 ft.), equipment not ordinarily found in most textile mills is required for processing. As a result, several manufacturers of lineoleum and carpets have undertaken the job.

THE ARMY QUARTERMASTER CORPS is vitally interested in the protective concealment of troops; and the colors adopted for many items of clothing and equipage, as well as tents, are designed to reduce their visibility. Thus, the new Olive Drab No. 7 shade recently adopted by Philadelphia Quartermaster Depot for 8.5-oz. herringbone twill (Army Specification 6-261) and by Jeffersonville Quartermaster Depot for tenting duck and other equipage has excellent camouflage properties; that is, since OD No. 7 photographs in just about the same way as does the shadow cast by a man, soldiers dressed in uniforms of this shade blend with their shadows in the photographs and hence are more or less concealed.

Another example of camouflage clothing is the reversible parka worn by ski troops. This parka is covered in Specification PQD 201. It is constructed of two layers of 5-oz. poplin conforming to Specification PQD 1A, one fabric being olive drab and the other white. Similarly, cotton balloon cloth printed an olive drab shade on one side and coated on the other side with white vinyl resin is employed in making reversible mountain tents; this fabric is covered by Specification PQD 257. For covering airplane motors, propellers, and cowls, a light-weight acetate rayon fabric conforming to Army Air Corps Specification 16755 affords concealment (as well as protection) by preventing reflection of light from polished metal surfaces.

To reduce the visibility of underwear when hung on bushes or spread on the ground to dry, knitted undershirts (Specification PQD 344) and broadcloth and muslin shorts (PQD 6-188B) are now required in olive drab.

Another fabric used to reduce visibility is cotton mosquito netting dyed in a green shade and rendered water-repellent and mildew resistant, as shown in Fig. 2. This fabric is covered by Specifications PQD 82 and 669-43 and is made in three types—bobbinett, tricot, and Nottingham.

A reversible one-piece jungle suit covered by Specification PQD 246 is designed for battle dress in the tropics. It is made from herringbone twill conforming to Army Specification 6-261 and is printed in a green camouflage pattern on one side and brown camouflage pattern on the other, as illustrated in Fig. 2. For use in connection with the jungle suit, Jeffersonville Quartermaster Depot is procuring a camouflage pack made of 9-oz. duck and conforming to Specification JQD190-E.

THE MARINE CORPS has given considerable attention to camouflage and has adopted a number of items similar to those used by the Army, plus some innovations of its own. The most important camouflage clothing item is a reversible poncho conforming to a revised Marine Corps Specification dated Sept. 24, 1942. This poncho is made from two plies of 1.8-oz., 96x94, cotton lawn coated with polyvinyl butyral and securely cemented together. One fabric is printed with vat dyes in a light camouflage pattern; the other fabric, with a dark pattern of identical design.

Photo Section, Philadelphia QM Depot

Fig. 2. Head nets of mosquito netting are part of the equipment of all troops fighting in the tropics. A reversible one-piece jungle suit printed in a camouflage pattern serves as a battle dress for these troops.

Other textiles printed in camouflage patterns covered in a Marine Corps Specification dated April 23, 1943 are: (1) a 4-oz. sheeting and a 3-oz. 72x68, print cloth also used for ponchos; (2) a 9-oz., 100x52 herringbone twill for use in utility suits, similar to the Army's jungle suits; (3) cotton duck for tents with camouflage design printed with vat colors; and (4) a two-bar, tricot-knit, mosquito netting for head nets with camouflage design printed with developed or pigment colors.

The Marine Corps also purchases fish netting, shrimp netting, burlap strips, and osnaburg strips of the same general types and for the same general purposes as the Army's.

NAVY REQUIREMENTS for camouflage materials are much smaller than those of the other branches of the Armed Services. Netting for drapes employed on combat ships is the largest item at present. Recently the Navy has adopted a gray summer uniform to replace the white uniform formerly worn and which could be seen from long distances at sea. The new uniform, which is made from cotton drill conforming to a Marine Corps Specification dated Nov. 22, 1937, is vat dyed to a slate-gray shade which blends with the color of the ships, water, and sky.

Total yardage of textiles of various types needed for camouflage cannot be revealed. However, one can readily see that the requirements are large from the fact the Army insists it must have a camouflage net for "anything on wheels that is shipped overseas," and one 30x30 ft. garnished net takes 100 sq. yd. of netting plus about 800 yd. of 2-in. burlap or osnaburg strips. As advances are made in the art and science of camouflage, specifications for textiles undergo changes. Hence textile mills interested in manufacturing and processing camouflage materials should keep themselves informed as to the latest developments and requirements. Principal direct sources for data on camouflage include: (1) Office, Chief of Engineers, Army Corps of Engineers, Washington, D. C.; (2) Philadelphia (Pa.) Quartermaster Depot; (3) Jeffersonville (Ind.) Quartermaster Depot; (4) Materiel Division, Army Air Corps, Wright Field, Dayton, Ohio; (5) Quartermaster Depot, U. S. Marine Corps, Philadelphia; (6) Clothing & Textile Branch, Navy Bureau of Supplies & Accounts, Washington.

WHAT THE GOVERNMENT BUYS

Digest of Finishing Specifications

THIS NEW ADDITION to the Textile War Manual, comprised of a digest of specifications relating to textile finishes, supplements the listing of Government specifications which appeared in the February, 1943, issue of TEXTILE WORLD.

Water-repellent, mildewproof, mothproof, coated, and other special finishes are being applied to increasing quantities and types of fabrics for military purposes. Listed in the table below are those fabrics which are required in special finishes, the treatment specified, and the use for which the fabric is intended. Also given are the specification numbers and the procurement agency or agencies purchasing each fabric.

The following abbreviations are used in the table:

Al	aluminum
Cu	copper
OD	olive drab
perm	permanent
resist	resistant
spec	specification
syn.	synthetic
WA	War aid
w-repel	water-repellent
wst.	worsted

The character of each specification is indicated by the capital letters preceding or by those in the parenthesis preceding the specification number:

A	U. S. Army Specification
AC	Army Air Corps Specification
AN	Army-Navy Specification
AO	Army Ordnance Specification
CQD	Chicago Quartermaster Specification
JQD	Jeffersonville Quartermaster Specification
M	Marine Corps Specification
MC	Medical Corps Specification
N	Navy Specification
PQD	Philadelphia Quartermaster Specification

Purchasing agencies are indicated as follows:

PQ	Philadelphia (Pa.) QM Depot
JQ	Jeffersonville (Ind.) QM Depot
WF	Army Air Corps, Materiel Div., Wright Field, Dayton, Ohio
Med	Army Medical Department, Washington, D. C.
Eng	Army Corps of Engineers, Washington, D. C.
C	Navy Bureau of Construction and Repair, Washington, D. C.
Chem	Army Chemical Warfare Service, Edgewood, Md.
CQ	Chicago (Ill.) QM Depot
MQ	Marine Quartermaster, Philadelphia
A	Navy Bureau of Aeronautics, Washington, D. C.
AO	Army Ordnance Department, Washington, D. C.
N	Navy Bureau of Navigation, Washington, D. C.
O	Navy Bureau of Ordnance, Washington, D. C.
S	Navy Bureau of Supplies and Accounts, Washington, D. C.
Sig	Army Signal Corps, Washington, D. C.

Prospective bidders can obtain complete copies of specifications for particular types of textile from the purchasing agencies which contract for those types. Copies of Federal specifications may be obtained from Superintendent of Documents, Washington, D. C. Certain of the textiles listed have been described in greater detail in previous issues of TEXTILE WORLD. Also, a number of the specifications had previously been listed in the Textile War Manual, Feb., 1943 issue of T. W., but covering cloth construction.

TEXTILE FINISHES

TEXTILE	FIBERS	FINISH AND USES	BOUGHT BY	SPEC. NO.
Alpaca pile	mohair & cotton	W-repel, mothproof	PQ	PQD-301A
Alpaca pile, 14.5-oz.	mohair & cotton	W-repel, mothproofed; for lining coats	MQ	(M)12/18/42
Bag	cotton	W-repel, Al salts & waxes; for personal effects	PQ	PQD-198
Bags, barrack	cotton	W-repel, mildewproof	PQ	PQD-142
Bag, clothing	cotton	W-repel; coated, vinyl resin	PQ	PQD-229A
Bags, food	cotton	Coated, rubber; waterproof for jungle use	PQ	PQD-232
Bags, sand	jute or cotton	Mildewproofed according to T-1452	Eng	(A)T-145lb.
Bag, sleeping	cotton	Mattress cover — balloon cloth, w-repel, Al salts and waxes. Cover—coated, syn. resin; used by mountain troops	PQ	PQD-203A
Balloon cloth, HH	cotton	Coated, w-repel; vinyl resins, Al salts & waxes; for mountain tents	PQ	PQD-257
Bars, sandfly	cotton	Mildewproof	PQ	(A)6-141
Bladder, flotation	.....	Coated, rubberized or vinyl resin; for jungle use	PQ	PQD-243
Camouflage colors	.....	Color card, 11 standard colors	Eng	(A)T-1213B
Case and covers	cotton	W-repel, Al acetate; duck cover for ordance equipment	AO	(A)6-142B
Cloth	cotton	Water repel, Al salts & waxes; for outer layer of mackinaws	PQ	PQD-127
Cloth	cotton	Coated, w-repel; for sleeping bag cover	PQ	PQD-135
Cloth	.....	Waterproofed; for electrical communication equipment	Sig.	(A)71-152A
Cloth	cotton	W-repel; Al acetate; for summer flying suits	WF	(AC)16105
Cloth, 16-oz.	cotton	Waterproofed	A	(N)M-2816
Cloth, banner	rayon	W-repel; Al salts & waxes	PQ	PQD-191A

Textile	Fibers	Finish and Uses	Bought By	Spec. No.
Cloth, gabardine	wool & cotton	W-repel; Al salts & waxes	WF	(A)6-234
Cloth, impermeable	cotton	Type I — coatings; pyroxylin, syn. rubber, syn. resins. Type II — oiled; vegetable oils	Chem, PQ	(A)6-269A
Cloth, waterproofed	cotton	Coated; vinyl resin	WF	(AC)16094B
Cloth, wind resist.	cotton	W-repel, durable; for arctic wear	PQ	PQD-1A
Cordage, braided	rayon	Moisture repellancy, Al acetate wax; for bomb parachutes	AO	(O)AXS-707
Cordage, braided	rayon	Moisture repellancy, Al acetate wax; for flare parachutes	AO	(O)AXS-728
Covert, 12½-oz.	wool	W-repel, durable	PQ	(A)8-122A
Covert, 16-oz.	wool	W-repel, durable	PQ	PQD-195
Duck	cotton	Coated; rubberized	WF	(A)6-42-B
Duck	cotton	W-repel; Al acetate, wax and soap; for tentage, etc.	MQ	(M)10/10/42
Duck, lightweight	cotton	Coated; non-slip; for deck covering	C	(N)52-09
Duck	cotton	Vat dyed, W-repel, Al acetate wax, and soap; tentage, leggings, etc.	JQ	JQD 226A
Duck	cotton	Mineral dyed, w-repel, Al acetate, wax, and soap; tentage, leggings, etc.	JQ	JQD 231A
Duck	cotton	Camouflage printed or dyed; for jungle packs	JQ	JQD 190E
Duck	cotton	Fire, water, and weather resistant; chlorinated paraffin, plastic, and pigments; for tentage	JQ	JQD 242
Duck	cotton	W-repel	JQ, C,AO,S,Y	(F)CCC-D-771a
Duck and twill	cotton	W-repel, mildewproof; Al salts and soaps	JQ	JQD-54A
Fabric, rubberized	cotton, ply	Rubber, gas-proof film used between cloth plys; for balloons and airships	WF	(A)6-44-G
Fabric	cotton	Fire, water, gasoline, and oil resist.; for aircraft	WF	(AC)16092C
Fabric	cotton	Coated; Neoprene; for balloons and airships	WF	(AC)16100
Fabric	cotton	Gasoline-resistant; syn. rubber; for fuel tanks	WF	(AC)16112-A
Fabric	cotton	Coated; rubberized; for aircraft flotation equipment	WF	AN-F-10
Fabric	cotton	Flameproofed; coated; for bed bags	S	(N)27-F11
Fabric	cotton	Waterproofed; coating; for parachute packs	WF, A	AN-CCC-F-56
Fabric, chutepack	cotton	Waterproof	A	(N)M-28lb.
Gloves	wool	W-repel	PQ	PQD-170A
Hammock, jungle	cotton	Cloth — w-repel. with Al salts, coated with vinyl resin. Duck — w-repel petroleum solvent type. Netting — w-repel to spec. PQD-115	PQ	PQD-256
Helmet liner	cotton	Polyvinyl coated duck for inside of helmets	CQ	CQD-65A
Leggings, canvas	cotton	W-repel; Al acetate	PQ	(A)6-288
Mildewproofing	cotton	Finishing spec.	PQ	PQD-115A
Mildewproofing	cotton	Cu naphthenate with tar, Cu oleate or Cu salt of tall oil; for sand bags, fabrics, threads, and cordage	Eng.	(A)T-1452 (Amend.1-6)
Nets, camouflage	cotton	Waterproof; coated	Eng.	(A)6-70B
Nets, camouflage	cotton	Preservative, Cu naphthenate & tar	Eng.	(A)T-1534
Nets, mosquito	cotton	W-repel, mildewproof	PQ	PQD-260
Nets, shrimp	cotton	Mildewproof and flameproof; for camouflage	Eng.	(A)T-1669
Netting, lace insect	cotton	Perm. finish	PQ	PQD 280
Netting, mosquito	cotton	Perm. finish for resistance to slippage	PQ	PQD-17A
Overcoat, parka type, WA	cotton & mohair	Outer cloth — w-repel type II, PQD-1A. Alpaca pile lining — w-repel, Al salts & waxes	PQ	PQD-258
Padding, 5.5.-oz.	cotton & flax	Perm. finish	MQ	(M)10/31/41
Paulins and covers	cotton	Water, flame, mildewproof; coated; for tarpaulins	WF	(AC)K-P-146
Paulin, extra lightweight	cotton or rayon	Waterproofed, flameproofed; for airplane protection	WF	(AC)26755
Paulin, lightweight	cotton or rayon	Coated, waterproof, resistant to mustard gas; vinyl resin or equivalent; for airplane protection	WF	(AC)26754
Poncho	cotton, 2 ply	Coated, w-repel; polyvinyl butyral resin	MQ	(M)12/24/42
Twill, uniform	cotton	W-repel; clothing	PQ	(A)6-201B
Raincoat	cotton	Coated, rubber; w-repel, Al acetate and soap	PQ	PQD-7
Raincoat	cotton or rayon	Syn. resin coated, pigmented to OD, and plasticized	PQ	PQD-71D
Raincoat	cotton	Coated, resin	PQ	PQD-151
Raincoat	cotton	Oil treated	PQ	PQD-154A
Raincoat, drawstring	cotton	W-repel; Al salts and waxes	PQ	PQD-200
Sateen, 9-oz.	cotton	W-repel; Al salts and waxes; for trousering, mountain troops	PQ	PQD-245D
Sheeting	cotton	Syn. resin coated; vinyl resins; for hospital use	Med.	(MC)1614B
Test Methods	.....	Textile, general spec. covering standard tests for military fabrics	PQ, WF, Eng., JQ MQ, A, AO, S	(F)CCC-T-191
Test Methods	.....	Infra-red test methods for camouflage	Eng.	(A)100-12
Water & Mildewproofing	.....	Compound for fabrics	WF	(A)3-138A
Water repellent	.....	Finishing spec., also covers mildewproofing	PQ	PQD-115A
Webbing	cotton	W-repel, mildewproofed	WF, AO	(A)6-185C
Webbing	cotton	Mildewproofed	WF	AN-JJ-W-151

MANUAL OF MILITARY FABRICS

Part VI—8.2-oz. Cotton Twill, Type IV

Manufacturing and processing details for uniform fabric covered by Army Specification No. 6-201B

To meet the need by textile mills for complete data on gray constructions, yarn organizations, weaving, and finishing of fabrics required in large quantities for military use, TEXTILE WORLD, with the approval of officers of the Quartermaster Corps, began publication in the February issue of a Manual of Military Fabrics. The mill organizations and other manufacturing and processing data were furnished through the cooperation of textile mills which are producing this fabric under Government contract. It is recognized that other plants having different types of equipment will have to make some modifications in the organizations, formulas, and procedures presented. Accordingly, these data should be regarded not as "standards" which must be followed, but as guides to the more efficient production of this fabric. Parts previously published are as follows: Part I, 5-oz. Poplin, Type II, P.Q.D. No. 1, February; Part II, 6-oz. Cotton Twill, Army Specification 6-311, March; Part III, 8.2-oz. Cotton Twill, Type I, Army Specification, 6-201B, April; Part IV, 8.2-oz. Cotton Twill, Type II, Army Specification, 6-201B, May; Part V, 8.5 oz. Herringbone Twill, Army Specification 6-261, June.

FOR USE IN ARMY UNIFORMS the Philadelphia Quartermaster Depot requires large quantities of 8.2-oz. cotton twill in five types. These fabrics are covered in Army Specification No. 6-201B, issued Dec. 9, 1942. Below is given a brief abstract of that part of Specification No. 6-201B, which relates to Type IV twill, followed by detailed information—not given in the specification—on the manufacture and processing of this fabric.

Abstract of Specification

Cotton: The cotton shall be of suitable length of staple and grade to meet the requirements of this specification. When irrigation-grown cotton is used, it shall not be blended with other cottons at any stage of manufacture.

Yarns: The cotton yarn shall be thoroughly cleaned, evenly drawn and spun; warp and filling shall be single on 2-ply yarn.

Color: Color shall be of khaki, olive drab, or any other color as specified in invitation for bids of the same shade as shown by the standard sample. Cloth shall be evenly dyed with vat colors and shall show a good fastness to the following tests: *Fastness to Weather*—Samples to be exposed for 30 days. *Fastness to Laundering*—Test to be conducted by washing procedures as outlined in Federal Specification CCC-T-191a. *Fastness to Bleaching*—Tests to be made as outlined in Specification No. 6-201B. *Physical Requirements*—Width shall be not less than 28 or more than 57 in.; weight per square yard—7.80 minimum, 8.60 maximum; ends and picks minimum 116x56; breaking strength minimum, by 1x1x3 grab method, shall be 155 lb. warp and 105 lb. filling. Weave shall be four harness twill to the right, 3 up, 1 down. *Finish*—The cloth shall be closely singed, bleached, fully mercerized, and shall contain no sizing. Fabric shall not shrink more than 1% in either the direction of warp or filling when subjected to tests for shrinkage in laundering, Section XIV, Federal Specification CCC-T-191a. When specified in the invitation for bids, the cloth shall be given a water-repellent treatment to provide a spray rating of 90 initially; after 3 launderings or 3 dry-cleanings, 80.

Manufacturing Details

Yarn Manufacture—Yarns are made on standard carded-yarn equipment without special settings in speeds and feeds from picker through spinning except as given in the detailed specifications. The 5-hank roving used to spin the 18s warp was made in order to get the breaking strength of warp required. The roving and yarns were spun on conventional frames without long-draft. Filling was not slubbed, but spun direct on quills for the loom. Clean stock is necessary and extra cleaning was secured in the hopper feeders by replacing the backs of hoppers with grid bars from pickers. The overflow-return line from the picker drops the overflow to the hoppers for additional cleaning.

Opening, blending, picking, carding and drawing organizations (designated No. 6 in every case) are the same for both warp and filling. Double roving is used for spinning. Roving Organization No. 8 for 5.00 h. r. and Spinning Organization No. 11 for 18s warp are employed for making the warp yarns. Roving Organization No. 9 and Spinning Organization No. 12 for 12s filling are used for the filling yarn. Yarns were spun on the heavy side of number.

Fabric Manufacture—Set loom with whip roll, drop wires, harness and take-up roll low to get a smooth face, relieve tension on warp and throw knots to the back. Set reed 2¼ in. from fell of cloth. Double bristle the shuttle and put opossum fur on each inside face.

Looms suitable for weaving this fabric include the Hopedale 40 in., 16 harness dobby looms with Stafford thread cutter and Hopedale feeler, and positive let-off, and are run at 160 p.p.m.; Draper Models K, E, X, X-2, XK and XD; attachments recommended are: Nutting bar take-up, Stafford thread cutter, and midget feeler; loom speeds require adjustment to the fabric—especially if high-production fabric was formerly run on them; Crompton & Knowles Models C-3, C-4, C-5 and C-6; no changes are recommended in the equipment of these looms; loom speeds can be adjusted to secure maximum production of first-quality cloth. Cloth room organization No. 3 (Part III of this Manual), No. 4 (Part IV of this Manual), or No. 6 are suitable.

Finishing Details

Scouring and Mercerizing

Follow procedure outlined in Part II of Manual (TEXTILE WORLD, March, 1943).

Dyeing

For producing olive drab shade usually required use Vat Dyeing Formula No. 3, 4, or 5 and procedure for Type I Twill outlined in Part II of this Manual.

Finishing

If water-repellent finish is specified in invitation to bid, follow procedure outlined in Part I of this Manual (TEXTILE WORLD, February, 1943). Preshrink on Sanforizing machine or other preshrinking equipment to give residual finish of not more than 1% in either warp or filling. Finished width, exclusive of selvage, to be not less than 28 in. nor more than 57 in.

Inspecting and Folding

Follow procedure outlined for Type I Twill in Part III of this Manual.

MILL ORGANIZATION FOR 8.2-OZ. COTTON TWILL, TYPE IV

Opening and Blending Organization No. 6

Grade—Strict low middling
Type—Delta
Staple—1⅛ in.
Mix—22 bales (top cut)
Processes—Bale breaker, hoppers, vertical opener
Saco-Lowell horizontal cleaner, trunk line, overflow return from pickers.

Picking Organization No. 6
12¾ oz. lap

Two processes
1st process: (Breaker and intermediate as one)
Type beaters:
2-blade back
2-blade front
Beater speeds:
840 r.p.m. back
1085 r.p.m. front
2nd process: (finisher)
Type beater:
Kirchner
Beater speed:
840 r.p.m.

Carding Organization No. 6
51 gr. sliver

455 r.p.m. lickerin
183 r.p.m. cylinder
7 r.p.m. doffer
3½ in. min. flats
50 in. dia. cylinder
27 in. dia. doffer
100 cylinder wire
110 doffer wire
100 flat wire
102.81-draft (waste deducted)
10 lb. per hr. pro.
6% waste
Main settings:
0.010 in. feedplate to lickerin
0.007 in. lickerin to cylinder
0.007 in. doffer to cylinder
0.007 in. flats to cyl. Points 1-2-3 (front)
0.007 in. flats to cyl. Points 4-5
0.022 in. front plate
0.017 in. backplate (top)
0.022 in. backplate (bottom)

Drawing Organization No. 6
52 gr. sliver

1st and 2nd drawing
350 r.p.m. F. R.
1⅜ in. dia. F. R.
5.99 and 6 draft
Type rolls:
Top: cork
Bottom: metallic
Roll Settings:
Back to 3rd; 1½ in.
3rd to 2nd; 1⅜ in.
2nd to front: 1 5/16 in.

Roving Organization No. 8

Slubbers
4.37 draft
170 F. R. speed
1¼ in. dia.
.70 hank roving
.94 twist
Roll Settings:
B-M: 1 9/16 in.
M-F: 1 5/16 in.
Intermediates
5.43 draft
132 F. R. speed
1¼ in. dia. F. R.
1.90 h. r.
1.11 twist
Roll Settings:
B-M: 1 9/16 in.
M-F: 1 5/16 in.
Speeders
5.26 draft
120 F. R. Speed
1⅛ dia. F. R.
5.00 h. r.
2.73 twist
Roll settings:
B-M: 1 9/16 in.
M-F: 1¼ in.

Roving Organization No. 9

Slubbers
3.12 draft
175 F. R. speed
1¼ in. dia. F. R.
.50 h. r.
.71 twist
Roll settings:
B-M: 1 9/16 in.
M-F: 1 5/16 in.
Intermediates
5.00 draft
164 F. R. speed
1¼ in. dia. F. R.
1.25 h. r.
.80 twist
Roll settings:
B-M: 1 9/16 in.
M-F: 1 5/16 in.
Speeders
4.00 draft
156 F. R. speed
1⅛ in. dia. F. R.
3.00 h. r.
1.78 twist
Roll settings:
B-M: 1 9/16 in.
M-F: 1¼ in.

Spinning Organization No. 11
18s yarn

5.00 h. r.—double
7.2 draft
145 F. R. speed
1 in. dia. F. R.
3.85 twist multiple
S direction of twist
11 gr. traveler (weight 10)
1 3/8 in. ring size
Warp bobbin type pkg.
Roll Settings:
B-M: As close as possible
M-F: 1⅛ in.

Spinning Organization No. 12
12s yarn

3.00 h. r.—double
8 draft
165 F. R.
1 in. dia. F. R.
3.85 twist multiple
S direction of twist
26 gr. travelers (weight 10)
1⅜ in. ring
8 in. package-quill
.77 oz. per quill
5–6 yd. bunch
1 7/16 in. taper
Roll settings:
B-M: close as possible
M-F: 1⅛ in.

Winding Organization No. 3

Cheese type pkg.
1½ lb. per pkg.

Warping Organization No. 6

10,500 or 21,000 yd. length set
11 beams to set
402 & 401 ends per beam
Barber Coleman type creel—435 ends capacity

Slashing Organization No. 6

21 yd. per min. slasher
5.9% size
Size Formula:
104 lb. cornstarch
16 lb. binder
13 lb. softener
1 pt. penetrating oil
150 gal. finished

Drawing-in and Weaving Organization No. 6

8.73 oz. per sq. yd.; twill 36 in. finished width
Drawing-in
8 harness plus 4 selv.
546 ends per harness
dobby type harness
12 in. length heddle
Duplex type heddle
Mechanical type drop wire
0.008 to 0.009 in. thick
Weaving
Gray: Oz. per linear yd. 10.32; yd. per lb. 1.55
width 39¼ in.
Warp ends in. 112, picks in. 58
Warp yarn 18/1; fill. yarn 12/1
Percent of warp 62.69; percent of filling 37.31
Selv. threads 18/1
Ends selv. 48; draw 2 per eye, 4 per dent
Reed D/in. 36.60; ends/dent 3
Reed spread 40.14 in. No. harness 8 (plus 4 tape or selv. harness) Straight draw
Ends per eye 1, Weave 3/1 twill to right
Take-up warp 17.5%, Take-up fill. 2.2%

Cloth Room Organization No. 6

No. inspections—One
Type inspection—In fold-knots to back
No. sides burled—Face
No. brushings—1
No. shearings—1
No. runs napper—None
Type grading—In fold
Folding—Folded
Length of fold—1 yd.
Bales or rolls—bales
Fin. yd. per cut—100 yd.
Total yd. per pkg.—1200 approx.

Cotton Variety & Yarn Quality

By GEORGE W. PFEIFFENBERGER*

THE STANDARDS OF QUALITY of cotton have been developed over a period of more than 125 years, and grade and staple length have emerged as the recognized measures of quality. The final answer to the question of cotton quality is to be found in the manufacturing performance of the fibers and in the quality of the finished product. Since manufacturers are primarily concerned with these two factors, the question is frequently raised as to the adequacy of the grade and staple length as measures of the spinnability and strength. Recent laboratory tests have revealed that cotton varieties consistently express their individuality with respect to spinning efficiency and the quality of the manufactured product, and this individuality may be entirely independent of grade and staple length. Thus, knowledge of the variety is necessary to supplement grade and staple length as measures of quality in cotton.

Strength of yarn is the most widely used single index of spinning quality. Hundreds of tests made in the testing laboratories of the U. S. Department of Agriculture show quite conclusively that variety, except in extreme cases, is the most important single factor in determining spinning quality as reflected by yarn strength. One large group of these tests comprised what is known as the Regional Variety Study and this involved three-year tests on 16 varieties of cotton grown in duplicate

* Associate Cotton Technologist, Cotton Branch, Food Distribution Administration, U. S. Department of Agriculture; in Charge, College Station (Texas) Testing Laboratory.

Variety	Station and Crop Year											
	College Station						Temple					
	1940 *			1941 *			1940 *			1941 *		
	Staple	Break in lb.	Appearance Grade	Staple	Break in lb.	Appearance Grade	Staple	Break in lb.	Appearance Grade	Staple	Break in lb.	Appearance Grade
Rogers Acala 111	1 1/32	115	B				1	113	B	1 1/32	110	B-
Shafter Acala	1 1/32	105	B-				15/16	102	B			
Nucala												
Acala Cody Lentz												
Acala Hasselfield												
Texacala										1 1/32	106	B-
Acala 1517												
Acala 8-3-2				1	105	B+						
Stoneville 2B	1	109	B	1 1/32	105	B-						
Stoneville 5				1	95	B-				29/32	92	B-
Deltapine 11-A	1 1/32	96	B				31/32	100	B			
Deltapine 14				1 1/32	100	B						
Delfos 719-821				1	106	B						
Washington (Delfos 719)	1 1/32	106	B	1	100	B-						
Roldo Rowden	1	91	B+				15/16	92	B			
Rowden Malone												
Rowden 41-B				15/16	83	B-						
Dortch's Rowden												
Buckellew Mebane							29/32	97	A-			
Mebane (A.D. Estate)							15/16	98	A-			
Bryant Mebane							29/32	97	B+		83	B
Mebane 140												
Mebane 804-50												
Western Mebane 140												
Watson Mebane												
Qualla												
Lankart	15/16	102	A-				31/32	104	B	1	98	B
Lankart x Mebane 153												
Hi-Bred												
Half and Half												

* A= *Excellent*, A- = *Very good*, B+ = *Good*, B= *Acceptable*, B- = *Poor*

Table I. Staple length, skein break, and appearance grade

at each of eight locations throughout the Cotton Belt, from Florence, S. C., to Lubbock, Texas. The breaking strengths of the 22s carded warp yarns spun from these cottons are shown in Fig. 1 for each variety during the three years and the average for the three years. Data for all eight stations have been averaged. One significant fact clearly illustrated by this chart is that yarn strength is very definitely influenced by variety and by season. The range of strengths attributable to varietal differences is considerably greater than that attributable to seasonal differences, and while it is recognized that this chart represents only sixteen varieties and three seasons, it is probably generally true that variety exerts the greater influence on yarn strength, except possibly for extreme seasonal influences, such as droughts. The chart shows also that although seasonal differences may be quite large, the varieties tend to hold their relative positions of rank with respect to yarn strength. The original data show that this is true even for cottons that were grown at widely separated points under different climatic conditions.

OTHER VARIETY TESTS have been made of a somewhat more localized nature. The staple lengths, and two of the most important spinning test factors, yarn strength and yarn appearance grade, are shown in Table 1, for a number of Texas-grown cottons. In the case of these cottons, as well as in a series of tests of cottons grown in the Southeast, it was again found that certain of them produced yarns of higher strength and were generally superior in spinning performance to others. This was the case regardless of place grown, prevailing weather conditions, or the staple length produced. A typical example of this is illustrated in Fig. 2. In this chart are shown the yarn strengths for the Stoneville 2B variety grown at such widely separated points as Statesville, N. C.; Tifton, Ga.; Florence, S. C.; Stoneville, Miss.; College Station and Greenville, Texas. It is significant that, although the staple lengths ranged from 1 in. at College Station, Texas, to $1\frac{5}{32}$ in. at Statesville, N. C., the greatest range in strength was only 6 lb.; and, in fact, for the two extremes in staple quoted above, the yarn strengths were 109 lb. and 110 lb. respectively. This is certainly not a significant difference in strength. It must be borne in mind,

reenville				Chillicothe						Lubbock			Victoria		
*	1941 *			1940 *			1941 *			1941 *			1940 *		
Appear-ance Grade	Staple	Break in lb.	Appear-ance Grade	Staple	Break in lb.	Appear-ance Grade	Staple	Break in lb.	Appear-ance Grade	Staple	Break in lb.	Appear-ance Grade	Staple	Break in lb.	Appear-ance Grade
	1 1/32	111	B	1 1/16	125	A-							31/32	122	A-
B	1	99	B-	1 1/16	111	B+				1 1/32	92	B-	1 1/32	113	A-
B-	31/32	100	B+				31/32	92	B+						
													31/32	115	B+
													31/32	117	B+
	1	101	B											118	A-
	1 1/16	123	B-												
B							1 1/32	92,	B						
	31/32	96	B				1	96	B+	31/32	96	B			
							1 1/16	106	B+						
B+															
A-															
	15/16	88	B+												
	15/16	89	B												
				1 1/32	98	A-									
	15/16	84	B+												
				15/16	103	A									
	29/32	86	A-												
							29/32	82	B+						
							31/32	76	B+						
A-				1 1/32	98	B+									
	15/16	100	B												
	15/16	86	B					78							
	7/8	84	B	29/32							85	B+			
							7/8	77	B+						

yarn spun from Texas-grown cottons, crops 1940 and 1941.

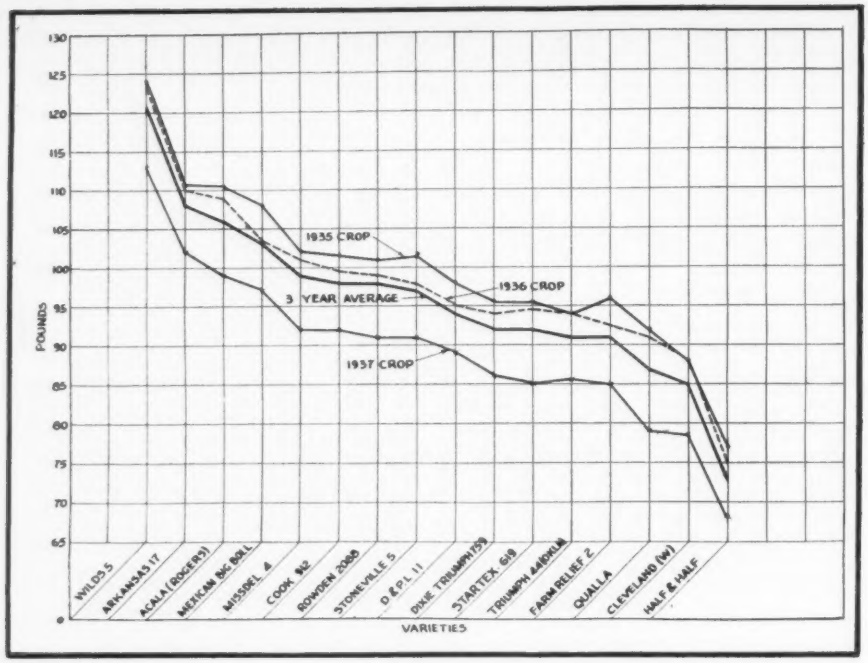


Fig. 1. Breaking strength in pounds per skein of 22s yarn spun from 16 varieties of cotton grown at 8 stations throughout the Cotton Belt, indicating seasonal and varietal effects; crops of 1935, 1936, and 1937.

however, in making comparisons such as this, that such differences in staple length would probably be highly significant when comparing two or more varieties. There is an over-all relationship between staple length and yarn strength when variety is not considered.

SIGNIFICANT CONCLUSIONS can be drawn from the data shown in Fig. 3. On this chart are grouped all the cottons classed as 31/32 in. and tested in the Texas-Oklahoma Variety Test of 1941. It will be noted that, although the staple length was constant, the range in yarn strengths was very great, the strongest yarn being 107 lb. and the weakest 77 lb. In looking for the cause of this wide range in strength, the question may arise as to whether these differences are due to variety or to the location where the cotton is grown. There is no doubt that location has some effect on yarn strength, because of differences in weather and climatic conditions, among other things. These conditions may have a pronounced influence during the growing season while the fibers are developing, or again while the open bolls are exposed prior to harvesting. Fig. 2, however, indicates that in these tests this effect was small, since the yarn strength of the Stoneville 2B cotton remained nearly constant from the Carolinas to Texas. The importance of variety is further shown in Fig. 4, which illustrates the ranking in strength of several varieties all grown at the same location. The strength ranges from 123 lb. for Acala 1517 to 84 lb. for Bryant Mebane AA-39 and Hi-Bred.

It should be clear that the selection of cottons and the judging of their spinning performance solely on the basis of grade and staple have serious shortcomings. As shown in Fig. 3, a group of cottons all classed the same staple length varied as much as 33% in the breaking strength of yarn. With only a commercial classification as a guide, it would be impossible to assemble bales in even-running lots in such a manner as to obtain the optimum spinning performance. If the classer's designations were supplemented with a knowledge of varieties and of their spinning performance, selection of cottons for particular uses could be made much more intelligently and with more reliable results. Instead of reducing the general strength level of an even-running lot to that of the average of the mixture of

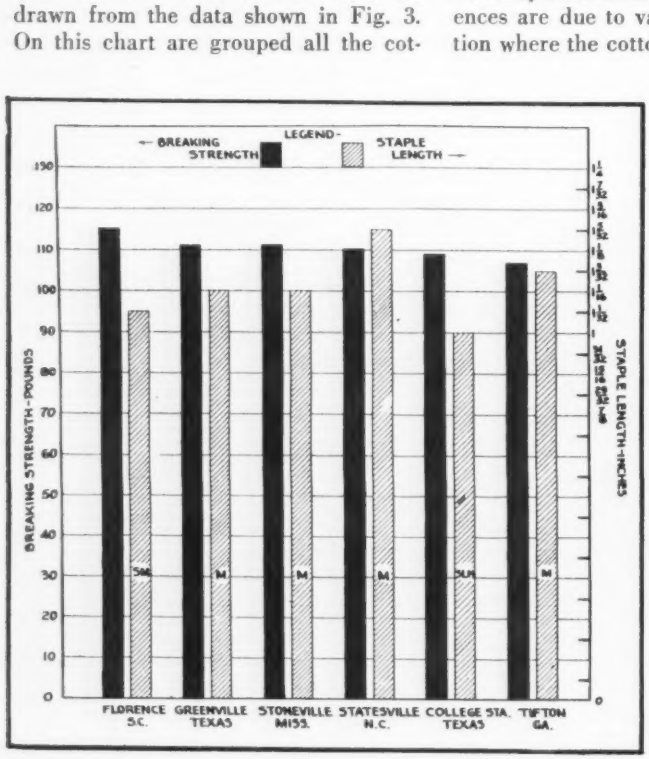


Fig. 2. Breaking strength in pounds per skein of 22s yarn and staple length a single variety of cotton, Stoneville 2B, grown at six widely separated locations in 1940 crop.

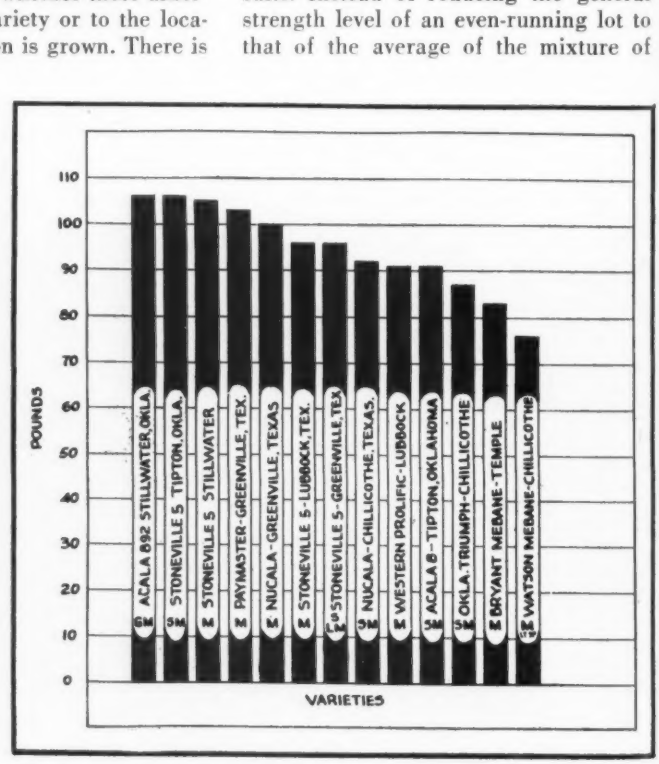


Fig. 3. The breaking strength in pounds per skein of 22s yarn spun from several varieties of cotton all of a single staple length, 31/32 in. crop of 1941.

good and poor varieties, the poorer cottons could be eliminated at the start, thus bringing up the strength level to that of the better varieties.

It is recognized, of course, that certain existing trade and marketing practices present difficulties. However, proper control of seed stocks and reliable certification would be of great assistance. Several of the larger mills have recently recognized the importance of variety and are now investigating the possibility of applying this knowledge to the selection of their cottons.

DOMESTIC MILLS HAVE NOT USED Texas cotton to a degree that one might expect, for reasons real or imaginary. When Texas had its large foreign markets, comparatively little consideration was given to this condition, but now, since the State must look to domestic outlets for its large cotton crops, the problem is acute. To make a fair comparison of spinning performance, the highest quality Texas and Southeastern varieties were drawn from the mass of data and are illustrated in Fig. 5. In preparing this chart, only those cottons attaining a breaking strength of 110 lb. or better for 22s yarns were used. On the left are shown the Texas-grown Acala cottons which averaged 116 lb. in yarn strength and 1 in. in staple length. In the center is a similar arrangement of the Southeastern-grown varieties which averaged 113 lb. in strength and 1⅛ in. in staple. Mississippi-Delta cottons grown in Texas are shown on the right. They averaged 112 lb. in strength and 1$\frac{3}{32}$ in. in staple. It is significant that, although the two groups of Texas grown cottons averaged $\frac{3}{32}$ to $\frac{1}{16}$ in. shorter than the Southeastern cottons, the yarn strengths were essentially equal. All these cottons are from the 1940 variety tests.

The discussion thus far has been primarily on those cottons producing high yarn strength. As can be seen in Table I, the several strains of Acala, Stoneville 2B, Deltapine 14, and Delfos generally led the list. On the other hand, a number of other varieties produced yarns of intermediate strength, and still other varieties consistently trailed in yarn strength. Among the varieties in this middle group are several Rowdens. The group producing the weakest yarns is comprised mainly of certain Mebane strains, Half and Half, and Hi-Bred.

The strength of 22s yarns only have been considered in this discussion for two reasons. First, this size yarn was spun on all tests, and second, if a cotton shows up weak on this coarse yarn, it will not spin fine yarns with any degree of success. Practically all these low-strength cottons are coarse-fibered

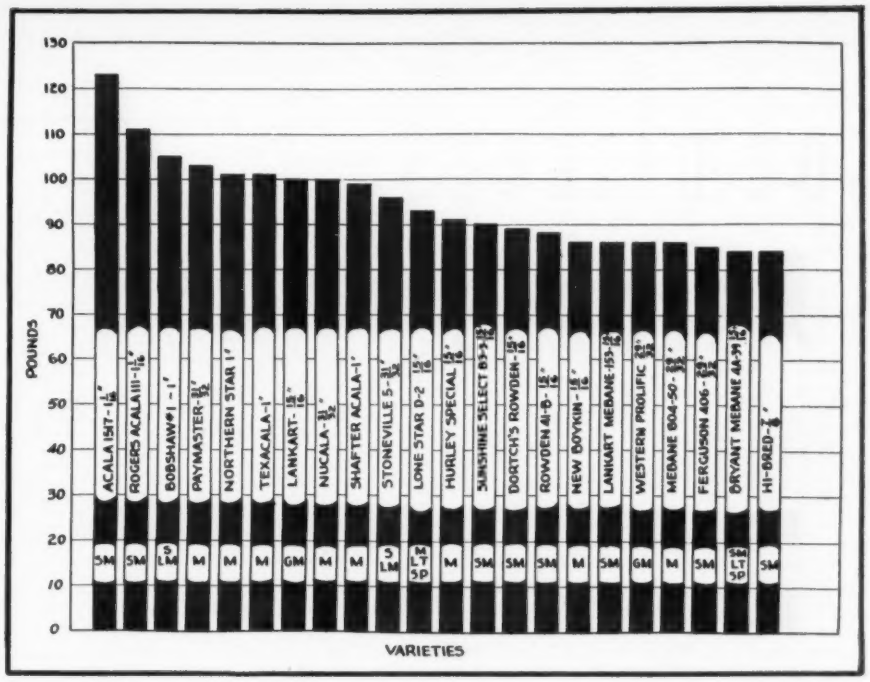


Fig. 4. Breaking strength in pounds per skein of 22s yarn spun from a number of varieties of cotton all grown at Greenville, Texas, crop of 1941

and are very much limited as to the fineness of the yarn that can be spun from them. The longer-staple cottons as a rule produce a slightly lower grade in yarn appearance but, as can be seen from Table I, the differences are slight and by no means consistent.

The Texas Agricultural Experiment Station Bulletin No. 624, "Gearing Texas Cotton to War Needs," also presents agronomic data, including, among other things, the relative yield for many varieties. From these data, together with those obtained from the spinning tests, it is apparent that many of the same varieties of cotton which can be recommended from an agronomic viewpoint, also produce cotton that is desirable to the manufacturer.

This paper, originally titled "The Importance of Variety in Determining the Spinning Performance of Cotton," was published as a part of the Texas Agricultural Experiment Station Bulletin No. 624, "Gearing Texas Cotton to War Needs," November, 1942.

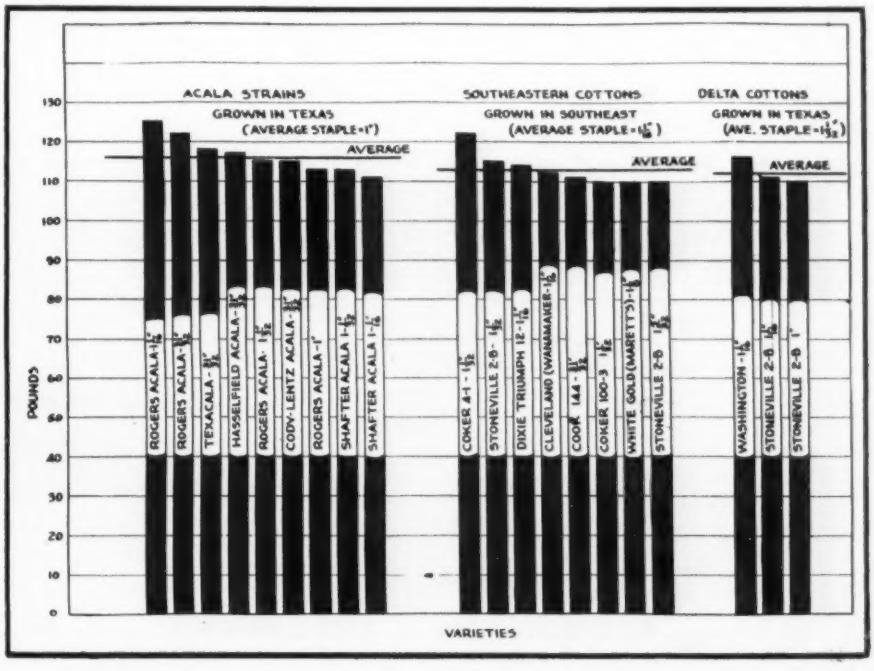
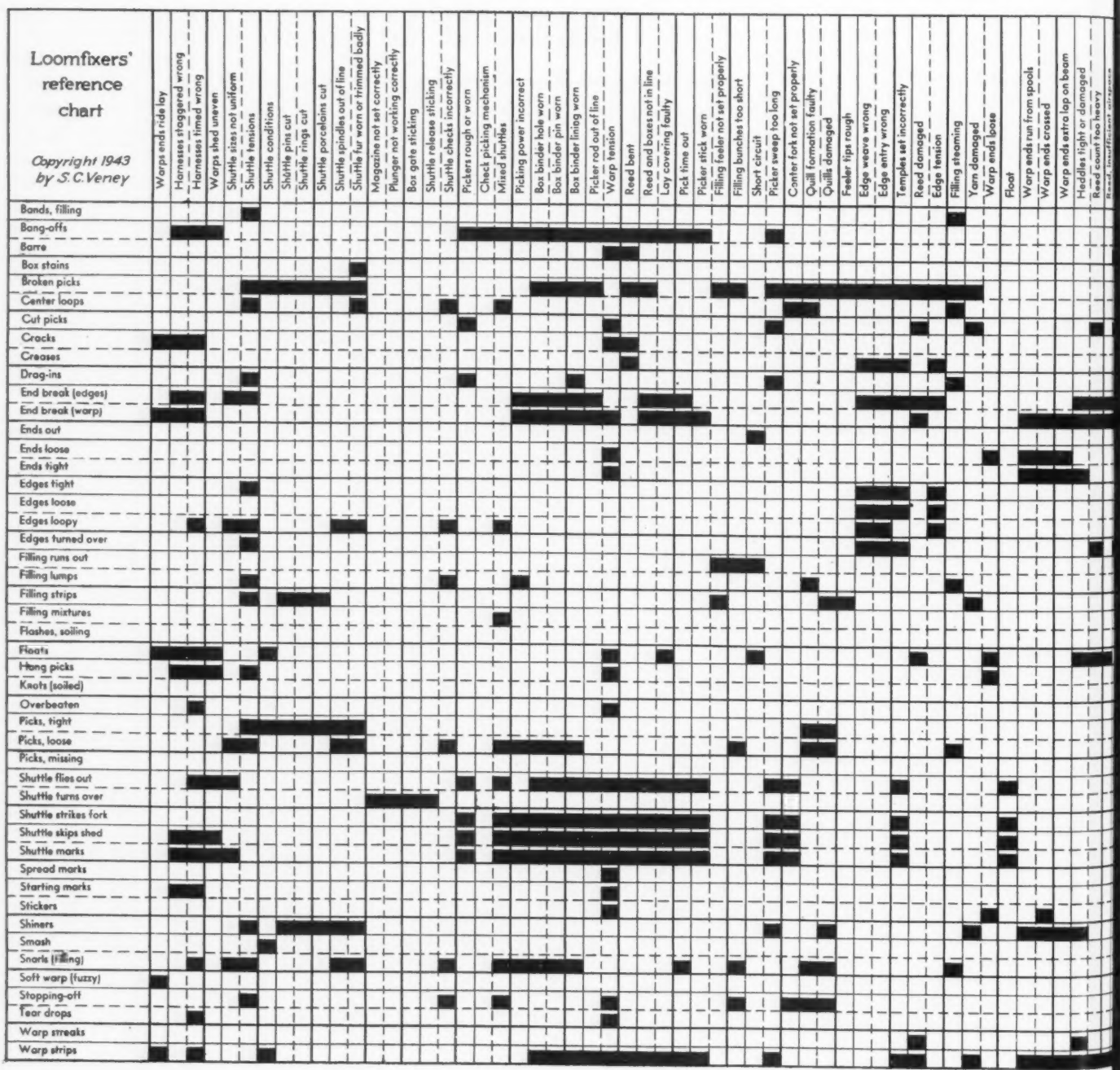


Fig. 5. Breaking strength in pounds per skein of 22s yarn spun from a number of Acala strains as compared to several Southeastern and Mississippi-Delta cottons, crop of 1940.

Loomfixers' Reference Chart

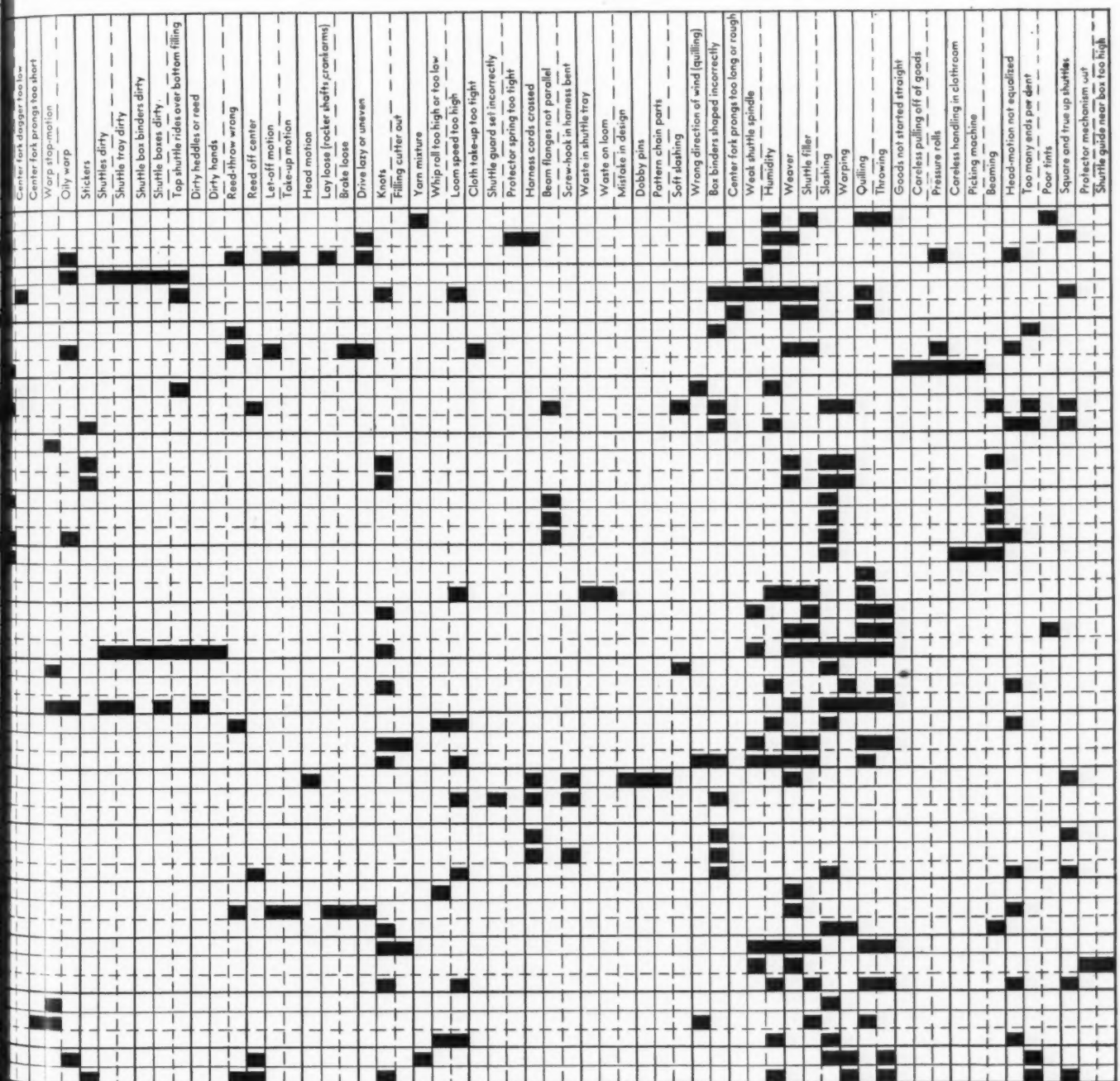
Reveals causes and indicates remedies for common defects in rayon fabrics



THE MAIN PURPOSE of this chart is to assist loomfixers in determining the cause of defects encountered in weaving rayon fabrics so that they can quickly correct any faulty loom condition producing the trouble. The chart should be of particular value in training new loomfixers, which at present is a serious problem in many mills. Common weaving defects are listed alphabetically in the left-hand column of the chart; mechanical faults are listed at the top of the chart; the blacked-in squares permit the loomfixer to determine quickly the possible causes of each defect. Basically, the fabric defects and loom troubles encountered with bobbin-changing looms and shuttle changing looms are closely related; and in most instances the solutions are so nearly alike that the chart may be used advantageously by fixers of either type of looms.

The items, *Reed count too heavy* and *Reed, insufficient airspace*, although included in the chart, are factors over which the loomfixer normally does not have control; whenever a fixer believes that either of these conditions exists, he should call the matter to the attention of the overseer. Likewise, the item, *Loom speed too high*, is not under control of the fixer, but is a problem for management; however, this item was included, as certain fabric defects are traceable to excessive loom speed.

Another item, not included in the chart, but one that must be considered in weaving rayon fabrics, and especially Nylon fabrics, is static in the reed. To date it has proved impossible entirely to prevent static from developing in the reed. However, loomfixers frequently ground the reed to the loom framework or use other methods to reduce the effect of static.



Starch Shortage Creates Problem

SHORTAGE OF STARCH for warp sizing, printing, and finishing has created a serious problem in the textile industry. Consumption of starch by textile mills in 1937 was approximately 158,000,000 lb.; rose to 260,000,000 in 1943. Cornstarch accounts for a high percentage of total amount of all types used. During the first four months of this year starch production was at a peak, but increased demands and cutting off of imports of tapioca and rice starch had created a tight situation.

In an effort to stimulate livestock production, high selling prices were guaranteed for hogs and price ceilings set on corn, with the result that farmers in the corn belt plunged into swine production, the swine census now is almost double the figures of normal years, and the hogs are eating the corn. Due primarily to the fact that farmers could obtain $1.40 a bushel for corn to feed to hogs, as compared with a ceiling price of $1.10 a bushel for industrial uses, starch producers found early in June that they were unable to purchase corn and were forced to curtail operations. Later in the month several producers had to close their plants, and others expected they would have to follow suit. Adverse weather conditions this spring contributed to the corn shortage, but only to a minor extent, as the starch industry consumes only about 4% of the total corn crop. A further factor is said to be huge Lend-Lease shipments of starch.

Textile manufacturers began to feel the pinch and promptly petitioned their congressmen to do something to relieve it. Likewise, the starch industry carried its side of the story to the War Food Administrator. Government officials, recognizing the fact that output of corn refining plants is needed in the war effort, began to take steps to assure starch producers an adequate supply of corn. First move was made on June 24 when the War Food Administration requisitioned stocks of corn at terminal market elevators. The Government will pay owners of the corn the ceiling price and will sell it to consuming industries and livestock feeders. This is regarded merely as a temporary expedient until a new program can be drawn up. Several suggestions have been made for dealing with the situation, but what the new program will be is anybody's guess. One proposal is that price ceilings be raised; however, OPA objects strenuously to this and WFA does not favor it too strongly. It is agreed that some plan will have to be formulated within the next few weeks to make it possible for industries on war work to obtain starch.

Cornstarch, corn sugar, and corn sirup are employed extensively, not only by textile plants, but by rayon producers, paper mills, adhesive manufacturers, bakers, confectioners, distillers of alcohol, manufacturers of aluminum castings for airplane engines, etc. There is no immediate possibility of substituting other types of starch or other products for cornstarch.

At the end of June trade reports indicated that supplies of starch in textile mills was unevenly distributed—some plants having fairly sizeable stocks and others having only enough for limited periods. The National Association of Cotton Manufacturers in a memorandum to its members stated that mills should take steps to insure their essential needs are covered, but no attempt should be made to stock ahead during the next few months.

Comber Waste and Yarn Quality

CONSERVATION OF SUPPLIES of the longer staples of cotton can be effected and operating costs in combed yarn mills can be reduced by careful control of the percentage of comber waste removed, according to a preliminary report made by Malcolm E. Campbell* and John M. Cook, of the U. S. Department of Agriculture. This report is based on the results of a limited number of tests which were conducted to determine the effects of removing different percentages of comber waste on the fiber properties, yarn strength, and yarn appearance of cotton of a quality in considerable demand for the manufacture of Army uniform twill and other war materials. Summary follows:

Cotton from a bale classed as $1\frac{5}{32}$-in. staple and Strict Middling grade was manufactured into carded yarns, and into combed yarns with nine different percentages of comber waste, ranging from 0.57 to 24.20%, removed in processing. Although only one quality of cotton was used in these tests, it is believed that the findings are applicable to other cotton having approximately this staple length range.

As comber-waste percentages increased, the fiber lengths in the sliver became more uniform, approaching a coefficient of length variability of 20% for the highest percentage, about 28% for the comber lap, and about 31% for the raw cotton. The length at the 25% point of the array increased about 1/64 in. and the mean length about 1/16 in. for the complete range of waste percentages. Although the average fineness of the fibers in the slivers remained practically unchanged, the average content of immature fibers decreased somewhat, and these immature fibers were found to be present in the waste.

Yarn strength increased significantly even when a negligible amount of comber waste was taken out, probably because of the drafting and slight combing action of the machine. The increase in strength with greater waste percentages was fairly consistent, and averaged 1% for each 2% increase in waste. A 5% increase in waste increased the average yarn strength to the same degree as would be obtained by an increase of 1/32 in. in the staple length of the raw cotton.

Yarn appearance was approximately as good at the 8% level as at the higher levels of comber waste. Thus, increasing the amount of waste taken out by the comber beyond about 8% improves yarn strength, but does not noticeably improve yarn appearance.

At about the 16% level for comber waste, which approximates the average percentage for the so-called peeler cottons, the yarn strength was 11.6% higher than was that for carded yarns, and yarn appearance was up as much as two-thirds of a grade higher.

For cotton of normal character, staple length of raw cotton is interchangeable with comber waste as regards the effects of yarn strength. For the range of staple lengths $1\frac{1}{8}$ to $1\frac{3}{8}$ in., and for comber-waste percentages ranging from 10 to 20%, it is more economical at current prices to increase yarn strength by removing more comber waste than by increasing the staple.

* Now with Textile Research Institute.

Nylon's Roles in War and Peace

In war: parachutes, tires, cordage; in peace: hosiery, lingerie, sash cords, etc.

By DR. G. P. HOFF
Director of Nylon Research
E. I. du Pont de Nemours & Co.

This interesting summary of the past, present and future uses of Nylon is abstracted from the address delivered by Dr. Hoff at the opening of the Goodyear Research Laboratory, Akron, Ohio, on June 23.

THE JAPANESE ATTACK on Pearl Harbor, severing all connection with Japan, focused attention on Nylon as the ace in the hole for parachutes. Without Nylon America would have had no equivalent for silk in any volume. Without Nylon it would have been dependent upon Japanese silk for making parachutes for fliers who eventually were to meet Japan in combat. But with Nylon our Government possessed not only the equivalent of silk, but a superior material. Everyone who has worked with both silk and Nylon will agree with that statement. In its combination of lightness, strength, toughness, and elasticity it provides the properties most needed in a fabric that must withstand the sudden shock of opening at high speeds. Nylon has the further advantage of being resistant to the effects of salt water, and it is far less affected by mildew and damaging insects than most other fabrics.

The characteristics of Nylon prompted us to consider it for many other uses beside hosiery, lingerie and parachutes. Several years ago we began work with the rubber companies to determine how Nylon might be adapted to use in tires, and experimental truck and bus tires were built with Nylon fabric. In the period of war duty the performance of the Nylon cord tires has been eminently satisfactory. Our Nylon research section has been devoting much attention to increasing the strength of the yarn going into these tire cords.

WHEN THE AIR FORCES went into the glider program they found Nylon ready to perform another exacting task. A maneuver was developed in which a it more suitable to one or another application. And the theoretical number carrying it up into the air and on to its destination. Obviously an unusually strong and elastic rope was needed for this job. Nylon rope had already been developed in 1940 for use in an airmail pickup service.

Today large quantities of Nylon yarn are going to cordage companies to be made into glider tow-rope, where it is working out very well, for large and small gliders. Those who have undergone the experience of being snatched into the air from a dead stop on the ground say it doesn't even throw their heads back, so smooth is the pickup.

All of the long bristles from which paint brushes were made came from the razor-backed long-legged swine that roam the cold plains of China and Siberia, and the war put a sudden stop to their importation. Taper is important to the smooth action of the brush, and while toothbrush bristles were the first commercial item made of Nylon, back in 1938, putting a taper on a bristle was a difficult job. It was finally achieved by pulling a continuous Nylon monofilament from a special spinneret at controlled variable speed, so that the filament was thin when it was being pulled at a fast speed and thick at slow speed. The filament at its thin points, became the small ends of the tapered bristles when cut. A new unit is now devoted entirely to making these tapered paint brush bristles, all of which are on allocation for the Government.

The Army and Navy have a shoe-lace problem, which at times is really serious. In the steaming tropics where the Pacific fighting and Caribbean patrolling are going on, ordinary shoe laces don't last long. The moisture and mildew rot them in a hurry—a matter of weeks or even days. Recently some of these shoes with cloth uppers, rubber soles and Nylon laces were sent to Panama for an Army workout. When they came back after the wear test about all that was left were the rubber soles, somewhat worn, and the Nylon laces, almost as good as new.

WE ALL BELIEVE that Nylon's past and present performance points unwaveringly to a bright future. A long list of applications in the textile field alone were already established before the war diverted production to military channels. The list includes stockings, first of all, and knitted and woven underwear and lingerie, lace and nets and marquisettes, sheer fabrics for dresses and blouses and infants' wear, woven fabrics of heavier weave for neckties, hat bands and blanket bindings, featherweight fabrics with resin coating for raincoats, golf jackets, food covers, etc., crush-proof transparent velvet, dresses with permanent pleats, scuff-proof fabrics for women's shoes. These are only a few.

We can visualize many more uses for this strong, resilient fiber: automobile upholstery fabrics that permit you to slide in and out of the seat as easily as you can on fiber slip-covers and that don't hold the dirt, men's shirting fabrics, light-weight tents for overnight hikes or longer camping trips, strong, durable sash cords for windows, rust-proof and corrosion-proof window screens, window curtains that will retain their shape without being dried on stretcher frames.

In the industrial field there will doubtless be an expanded use of closely-woven Nylon for filters and bolting cloth. And plastic forms of Nylon will be available for rods and tubing, resistant to alkali, oils and gasoline. Nylon fabric impregnated with Neoprene and stamped into shape, is used for carburetor diaphragms in certain airplane engines today and will doubtless continue in this application after the war. Extruded Nylon strips, pigmented to any desired color, have made unusually weather-resistant "rattan" seats and backs for outdoor furniture. Similar material, in narrow widths, has been considered for bus and trolley seats. Nylon coatings and films are expected to find many uses. Experimental shoes made of Nylon coated fabric, resembling kid, calf or patent leather depending on the surface treatment, have shown great promise.

Nylon is not one substance, but a whole family of compounds. We are already making ten different types, each with distinctive properties which make it more suitable to one or another application. And the theoretical number of Nylons runs into the thousands.

If Your Machines Have the Shakes

Mounting them on vibration-absorbing materials will help remedy the ailment.

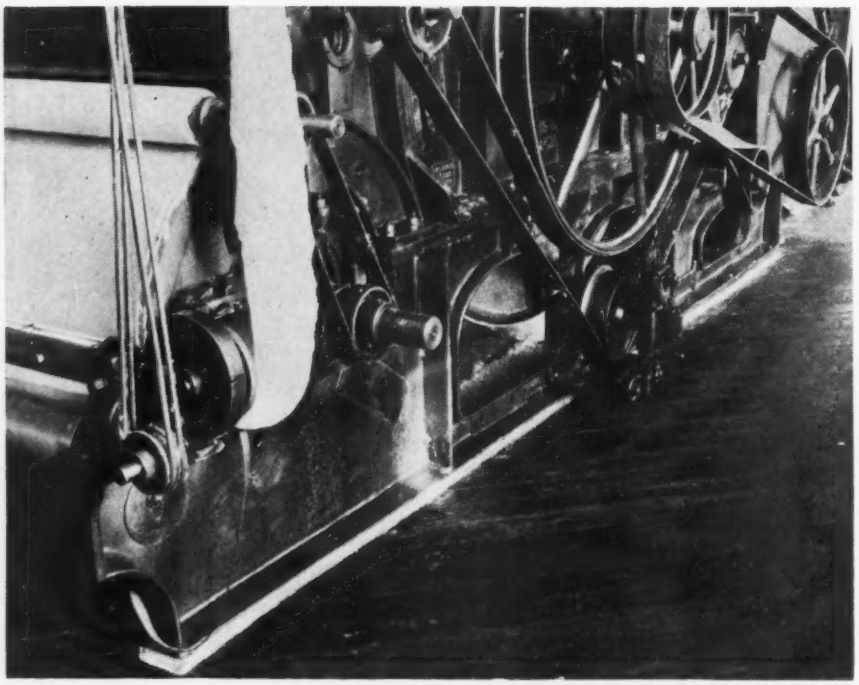


Photo courtesy of Felt Association, Inc.

Fig. 1. Wool felt pads cut to shape of base of machines reduce vibration.

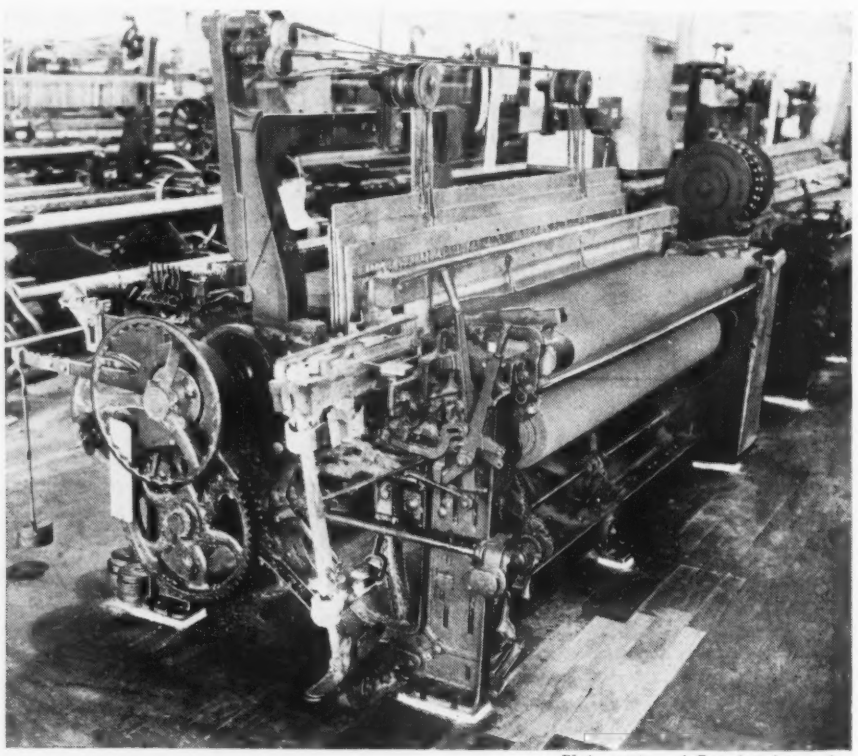


Photo courtesy of Felt Association, Inc.

Fig. 2. In mounting looms it is customary to use separate pads of the vibration-absorbing material under the feet of the machine.

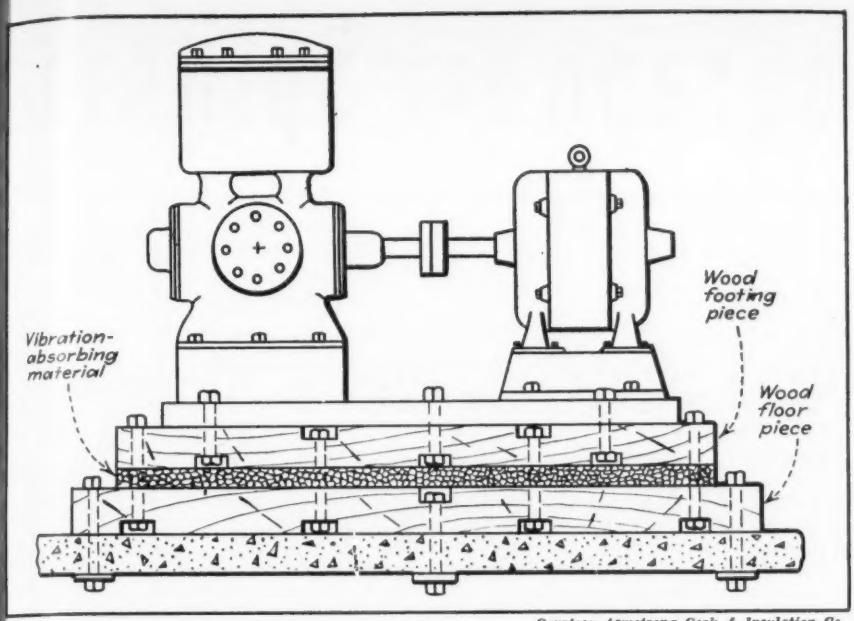
INCREASING THE SPEED of spinning frames, looms, and other textile equipment has brought with it the problem of overcoming excessive vibration of the machines. The gravity of the problem is indicated by the fact that the Textile Division of the American Society of Mechanical Engineers recently appointed a special committee to investigate what can be done to solve it. It is probable, however, that it will be some time before that committee completes its investigation and issues its final report. Meanwhile, a number of individual companies have begun to take steps to reduce vibration of the machines in their own mills.

The most serious results of excessive machine vibration include: (1) the destructive force exerted on the mill structure; (2) destructive effect on the equipment itself, causing excessive wear and tear; (3) disturbance of machine settings, leading to defective products; and (4) noise, resulting in lowering of efficiency of workers.

Benefits derived from absorbing vibration include the following: (1) damage to the mill structure is considerably lessened; (2) machines have a longer life and fewer repairs and replacements of broken parts are required; (3) machines run smoother with less disturbance of settings, thus resulting in more uniform product; (4) working conditions are improved due to less noise; and (5) further increases in machine speeds often are made possible.

USE OF RESILIENT MACHINE MOUNTINGS to isolate unwanted machine vibration is receiving more and more attention in the textile industry. There is still much to be learned regarding the use of such mountings; and, therefore, the following recommendations should be considered as tentative.

It appears that a vibration-absorbing mounting should have and should retain during a long period of use the following characteristics: compressibility, resiliency, and inertness to oils and floor-cleaning compounds. Vibration-absorbing materials commonly employed include felt, cork, rubber, and synthetic rubber. These materials are used in the form of strips, slabs, pads,



Courtesy Armstrong Cork & Insulation Co.

Fig. 3. One method of mounting two or more units on same bed plate utilizing existing wood or concrete floors and cork vibration-insulating material.

blocks, etc., and also are utilized in making vibration-absorbing devices of various types. Another material which has been employed is cane-fiber building board in form of pads; this is said to be particularly effective also as hoods for motors and other equipment to cut down air-borne noise.

Among the various types of textile mill equipment which are being mounted on vibration-absorbing materials or devices are pickers, cards, combs, spinning and drawing frames, winders, twisters, warpers, looms, nappers, shears, chenille machines, sewing machines, motors, pumps, air-conditioning units, testing machines, lathes, and other machine tools.

THE METHOD OF MOUNTING cards and looms on wool felt pads is illustrated in Figs. 1 and 2. It will be noted that for cards, the felt pads are cut to the shape of the base; for looms, it is customary to use separate pads under the feet of the machines. Cork and other vibration-absorbing materials are employed in a similar manner.

One method of applying cork vibration insulating material to two or more light-weight units, such as pumps and motors, on same bedplate is shown in Fig. 3.

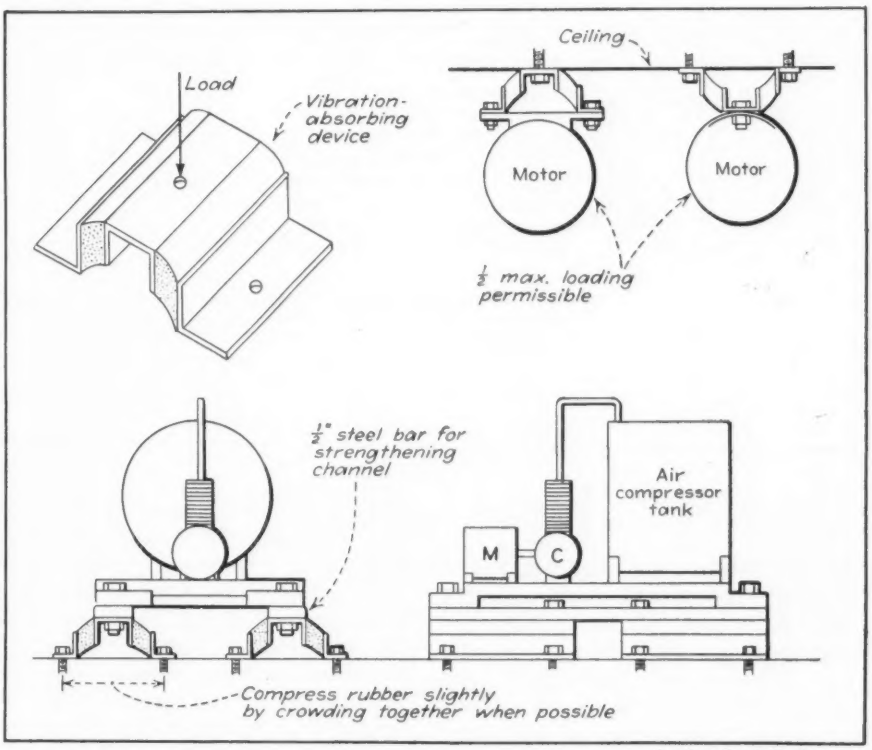
With felt pads, it is common practice, when a machine does not have to be fastened in place, to cement the pads to the machine so that they will remain on the machine if it is moved to another position in the mill. With cork pads, machines often can be mounted merely by placing them under the base or feet without cementing or lagging. If lagging is necessary to prevent the machine from crawling, the lag screw should not be tightened too much, but only enough to hold the machine in place. Lagging a machine through a vibration-absorbing material reduces the amount of vibration absorbed; and the tighter the lagging, the less effective is the material.

Several factors must be taken into consideration in determining the thickness of the pad to be used. These include density and resiliency of the vibration-absorbing material, weight of the machine, motion of the machine—whether reciprocating or rotary, speed of the machine, room temperature, and degree to which it is desired to absorb the vibration.

With some types of equipment, the problem of vibration absorption is comparatively simple. With other machines, such as looms, which have a complex set of motions the problem is a difficult one to solve. Manufacturers of vibration-absorbing materials and devices have given considerable attention to the subject and have developed engineering and performance data which will be helpful to textile manufacturers who are troubled by execessive vibration of machines.

Methods for ceiling mounting and floor mounting equipment with one type of vibration-absorbing device is shown in Fig. 4. This particular device, which is made in several models for different loads, is made by bonding rubber or synthetic rubber and metal to form a vibration-absorbing support which is in effect a rubber spring, and which is generally designed to carry a load in shear.

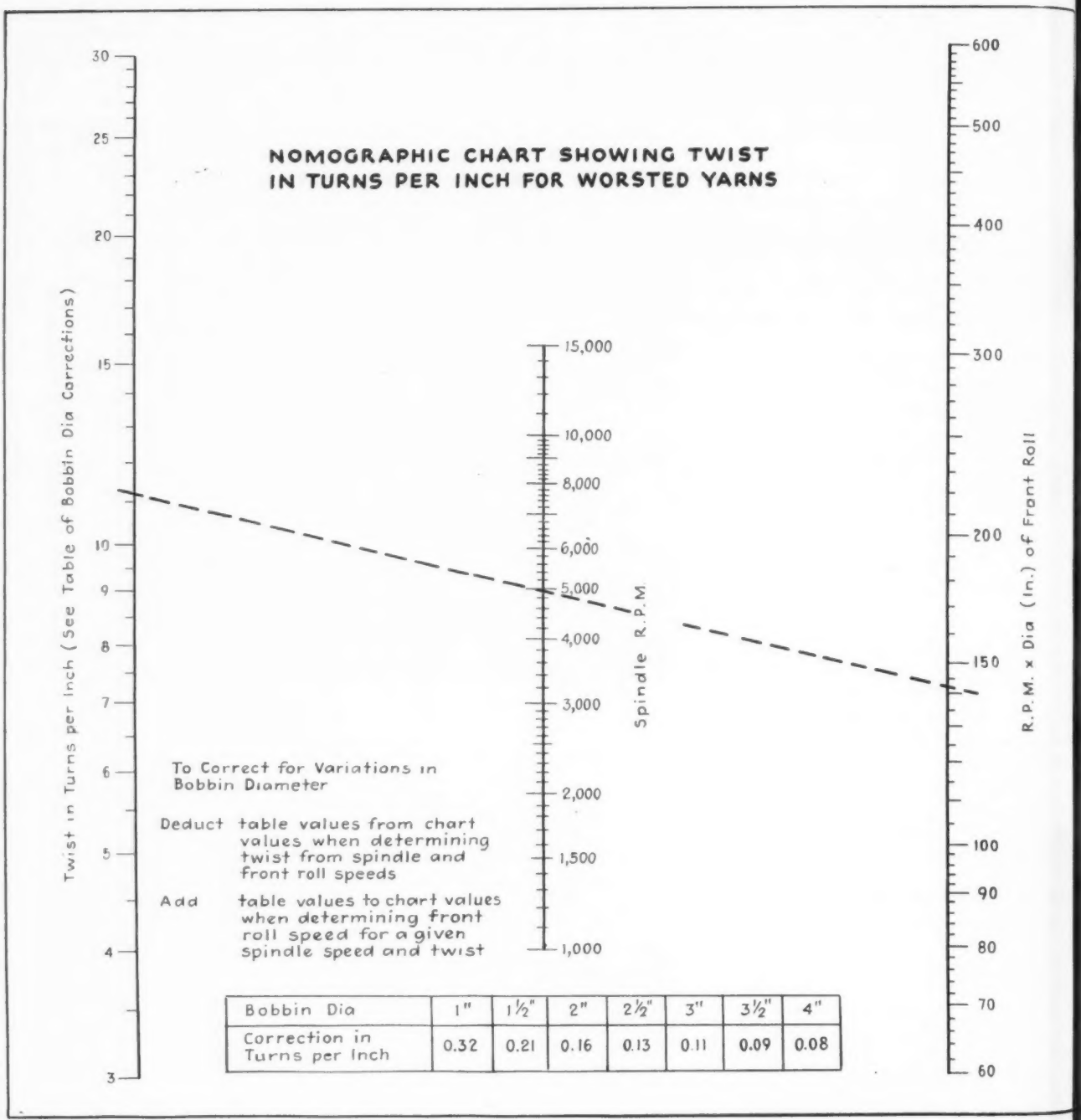
Vibration-absorbing devices of this type, when properly installed, require no care except protection against excessive oil, temperatures above 150° F., and corrosion of the metal parts. They are not affected by moisture, and an occasional small spattering of oil does little harm. A shield can be used to protect them against excessive oil.



Courtesy B. F. Goodrich Co.

Fig. 4. Methods of mounting machines on ceiling and on floor utilizing a type of vibration-asborbing device which is in effect a rubber spring.

Twist Nomograph for Spinning



Bobbin Dia	1"	1½"	2"	2½"	3"	3½"	4"
Correction in Turns per Inch	0.32	0.21	0.16	0.13	0.11	0.09	0.08

By MORRIS C. BISHOP

MATHEMATICAL DETERMINATION OF TURNS OF TWIST PER INCH in worsted spinning is involved and time-consuming. But, superintendents and overseers have listed in their little black book the spindle speeds, front roll speeds, and sizes. These factors are calculated for each spinning frame with corrections for bobbin diameters and contraction.

The accompanying chart applies to all types of worsted spinning frames—cap, ring, and flyer. The mill man may, through its use, save much time in determining the turns of twist per inch, spindle speed, or front roll speed for any front roll diameter on all of his frames, using this nomograph.

The mathematical expression for determining turns of twist and upon which this chart is based is as follows:

$$\text{t.p.i.} = V\left[\frac{\text{R.P.M.s}}{3.1416 \times \text{Dr} \times \text{R.P.M.r}} - \frac{.318}{\text{Ds}}\right]$$

where—R.P.M.s = r.p.m. of spindle
R.P.M.r = r.p.m. of front roll
Ds = dia. of full bobbin (in.)
Dr = dia. of front roll (in.)
$V = \frac{\text{untwisted length}}{\text{twisted length}}$

Left-hand portion of the nomograph represents mathematically the following expression:

$$\frac{\text{R.P.M.s}}{3.1416 \times \text{Dr} \times \text{R.P.M.r}}$$

while the table of corrections for bobbin diameter variation takes care

the expression .318/Ds. The contraction factor V is taken as unity, which is the same as stating that contraction is omitted as a factor in the chart.

The application of this chart is illustrated as follows:

Take, for example, a yarn which is to be spun with 11 t.p.i. on a frame of which the spindle speed is 5,000 r.p.m. The bobbin diameter varies from 1 to 2 in. with a mean diameter of 1½ in. The table of corrections states that 0.21 t.p.i. is to be added to the 11 turns; thus, point 11.21 should be located in the nomograph on the vertical scale marked *Twist in Turns per Inch*. A line is drawn across the chart through 11.21 turns and 5,000 r.p.m. of the spindle and intersects point 143 on the vertical scale. This intersection represents the product of the front roll diameter and speed. If the front roll diameter is 4 in., the roll speed will be 143 divided by 4 = 35.75 r.p.m.

Assuming that contraction will be approximately 2%, adding this percentage to the speed found gives 36.4 r.p.m. of the front roll as the speed which will give the desired twist.

The table of corrections for variations in bobbin diameter applies to cap and ring frames only. If the chart is to be used for flyer frames, the flyer r.p.m. must be substituted in the chart in the place of the spindle speed, and the chart values are to be taken as net, after correcting for contraction, without making adjustments for the variation in bobbin diameter.

Hand Loom for Making Samples

By FRED W. STERLING

THE 24-HARNESS, 24-in. hand loom, described in this article, produced the sample hand-loomed fabrics illustrated and described in the August and October, 1942, issues of TEXTILE WORLD. This hand loom, which is well adapted for use of mill designers in small woolen plants, is illustrated in Figs. 1 and 2 and may be easily constructed. Many varied and interesting sample fabrics may be worked out by the designer on this hand loom, an outstanding advantage being that the harness chain and drawing-in draft developed may be utilized, without alteration, on many power looms.

A side view of the loom, Fig. 1, shows the harnesses with a large pattern board above it which holds the design. The warp beam with weights to furnish let-off tension, the crankshaft consisting of a large wooden disk with crankarm attached, the lay swords fulcrumed at the middle of the loom framework, reed, breast beam, sand roll and take-up roll are visible. Of novel construction is the harness control jacks.

The loom is operated by a handwheel attached to the opposite end of the crankshaft from that shown in Fig. 1. Harnesses are set by first lowering all of them. Then, each harness to be raised, as indicated on the design in the pattern board, is lifted by pulling the harness jack controlling that harness in the direction shown by the arrow in Fig. 2. A dog attached to that harness slides over the top of a stop and eventually drops into a depression on the stop, holding the harness in a raised position. After the required number of harnesses have been raised, the pick is made by passing a regular loom shuttle through the shed by hand. Use of a regular loom shuttle is a distinct advantage, as it permits yarn in normal mill put-up to be used for filling. After picking and beating-up the filling, the harnesses are reset or lowered by raising a trip that lifts all of the dogs out of the stop.

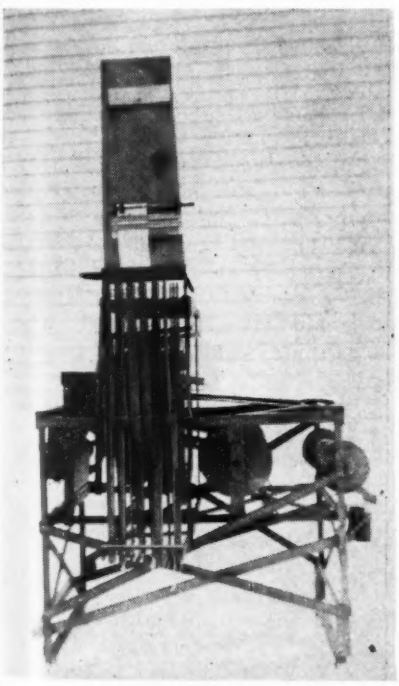


Fig. 1. Side view of hand loom constructed of wood and spare parts.

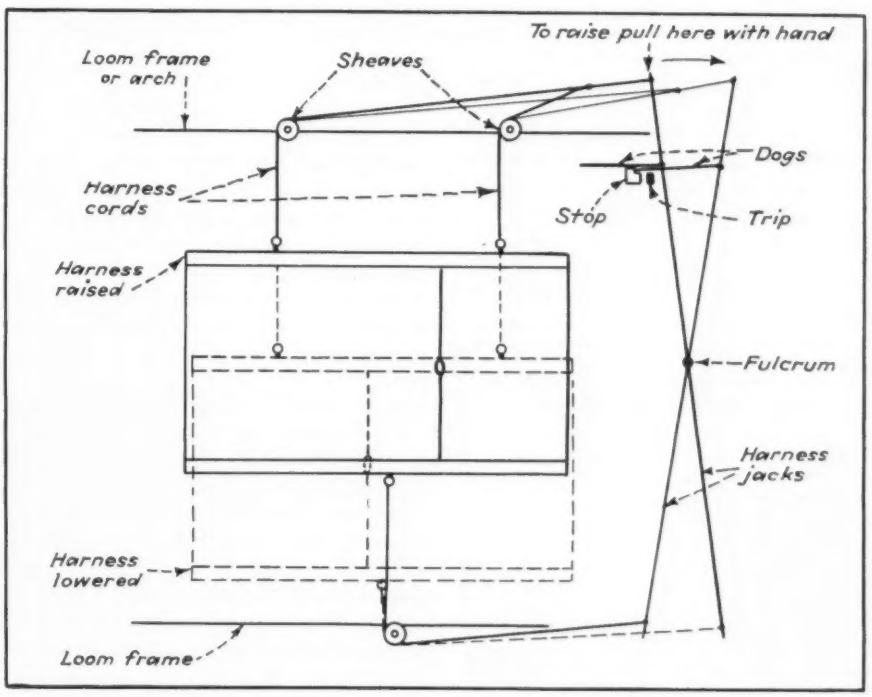
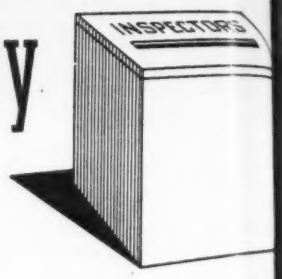
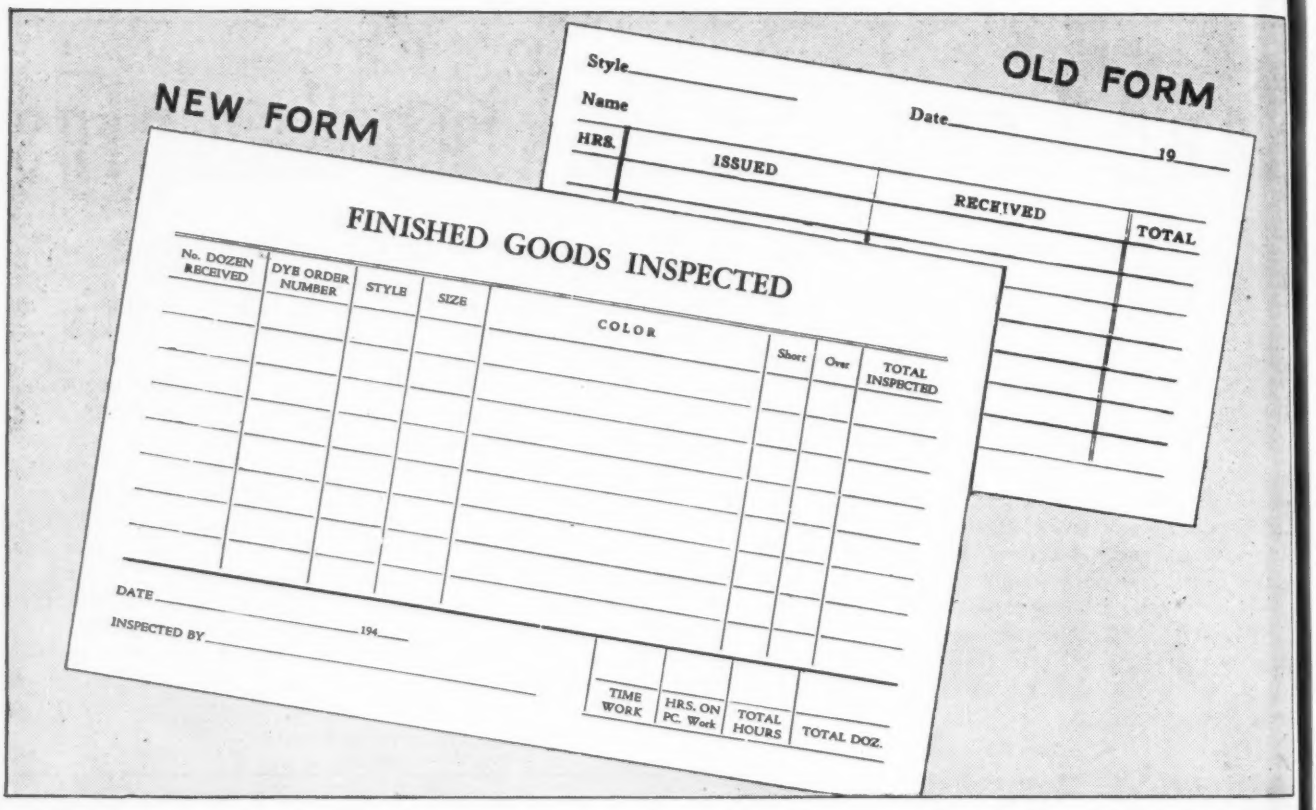


Fig. 2. Diagrammatic view showing operation of harness-jack control mechanism.

Checking Finished Hosiery



Use of simple form and tickets will reduce pencil work by the inspectors



New form which reduces the number of forms to be filled out. Old form replaced by one in foreground required the use of a separate form for each color.

Production ticket which must accompany all goods.

To be Boarded_____Inches

PRODUCTION TICKET
9

Style_____ Color_____
Dye Order No._____ Dozens_____
Firsts _____
Irregulars _____
Menders _____
Redyes _____
Odds _____
Total _____

INSPECTED BY_____
HOURS_____ DATE_____

By DON BRADFIELD

INSPECTORS ON PIECE WORK must keep an accurate record of the work they inspect, not only the amount in dozens, but records of the style, size, and color. This information is most important to the employer, as it is to the employee, because payrolls are one of the many items made-up from these records.

For checking and keeping an accurate record of finished goods inspected, an outstanding southern hosiery mill has adopted a method which simplifies the work and helps maintain accurate cost and production records.

Finished work is issued to the inspectors with a production ticket that goes with the goods from the gray department to the dyeing and through the boarding department. The inspectors fill in this production ticket, illustrated at left, which gives a description of the quality of the work. The stock clerk enters this information in a book of finished inventory. The new form shown above is also filled in by the inspector to aid the timekeeper and maintain an accurate record of such work. This form simplifies the keeping of records by the inspector by condensing onto one sheet all information which was formerly recorded on the old form also shown, using a sheet for every style.

Inspectors' tickets formerly were collected by the stock clerk after the inspectors finished their day's work. This practice often called for overtime work because of other duties. Now, a deposit box, similar to sketch at top of page, is employed, and envelopes of heavy stock are handed to the inspectors each morning with their name inked on them. Inspectors put their tickets in these envelopes at end of day and deposit them in the box. The stock clerk, the next day, takes these out and checks the items on the tickets and forms.

Oiling Cotton at the Picker

Helps working conditions by reducing dust and fly; has additional advantages

By E. H. HELLIWELL

OF THE SEVERAL ADVANTAGES which result from oiling cotton, the most important from the viewpoint of many textile men is the improvement in working conditions. Some of the other advantages which have been cited may be debatable, but there is no question as to the effectiveness of oiling in reducing dust and fly in the card room, thus making it a cleaner, healthier, and more pleasant place to work. It was difficult at first to convince the writer that the benefits derived from oiling cotton justified the cost. However, he soon found out that it is worth while from the standpoint of better working conditions alone, and later proved to his own satisfaction that it has other advantages.

Many employees who found work in the card room agreeable in every other way have had to give it up because of the lint and dust. There is no doubt that this lint and dust are disagreeable and irritating, causing sneezing and coughing.

It is probable that constant exposure to dust and fly results in more serious nose, throat, and lung ailments. Many workers have been advised by doctors to get away from card-room dust. With the shortage of labor, it is doubly important today for mill executives to do everything possible to make their employees comfortable and contented.

Application of just any oil will not give satisfactory results. Manufacturers of conditioning oils have done much research and experimenting to develop oils that have all the required properties. The conditioning agent added to the basic mineral oil used has certain hygroscopic properties which tend to prevent the generation of static and maintain a more uniform moisture content.

The oils are selected to minimize fire hazards; to remain stable and not leave gummy deposits on machine parts; and to have no effect on the subsequent warp sizing, bleaching, dyeing, and finishing operations.

Plants using waste and low-grade stocks have found oil almost indispensable. But the advantages of oiling are not confined to such plants.

TESTS MADE IN A TYPICAL MILL at the opening and picker processes on oiled and unoiled stock indicate that there is a slight increase in amount of dust and leaf removed with oiled stock. Lickerin waste also shows a slight increase, but the total amount of waste made in the picking and carding processes shows a reduction varying from 0.5% to 1.3%. This decrease in amount shows up in reduced fly, strips, and invisible loss. This can be attributed to less fiber breakage, due to increased fiber pliability, and to the retention of the fibers in the card sliver caused by the oil treatment.

A saving of 1% of good fiber means 1 lb. saved in every 100 lb. or 5 lb. per bale. With 20-cent cotton this equals a money saving of $1 per bale. If 0.25% of oil is applied, it would amount to 4 oz. per 100 lb. The cost of oil is about 9 c. per lb. This means a saving of 90c. per bale. Although the lower resale value of the waste made offsets a small part of this saving, any mill using 300 or 400 bales of cotton a week can show a worthwhile money saving.

The small amount of oil used, 0.25% to 0.30% will not cause loading of either doffer or cylinder. The oil has no effect on the card clothing foundation, but it does have a cleaning, rust-preventing action on the card wires. This was noted in one particular instance where cards had been stopped for two years in a closed mill. The wire on the doffer was badly rusted in exposed spots. When cards were run with oiled stock from the picker room for a short period, the rust was removed by the action of the oiled-treated stock and the wire was returned to its original clean condition.

Oiled stock is found to be less affected by static and less subject to excessive drying out over the week-ends or during dry spells of weather. Drawing-sliver yard weights are more easily maintained and show less variation due to changes in relative humidity. Roving and yarn numbers are more uniform, but slightly heavier when made up from oiled stock. Adjustments should be made, with gear changes, to compensate for this increased weight. There is less clearer waste made on both drawing frames and slubbers with oiled stock, and less roll lapping, but no difference could be noted in the amount of waste made on spinning frames or spoolers and warpers.

Some individual tests have shown an increase in breaking strength of yarn and also reduced end breakage on oiled stock. However, under actual mill operating routine, while yarn numbers have been more uniform, no consistent improvement has been noted in either yarn strength or end breakage.

APPLICATION OF THE OIL is carried out by different methods in different plants. Some apply the oil in the hopper of the first feeder. Others apply it in the finisher beater chamber. Still others apply it at various points in the conveyor system.

Those who prefer to introduce the oil in the opening feeders believe that this method insures cleaner opening and picker rooms, increases the amount of small seed and leaf removed, promotes a better diffusion of oil throughout the whole mass by mixing and contact, and requires less equipment for application. There is a loss of oil on the removed leaf and seed and on feed and pin aprons. The small amount of oil which falls onto aprons has no harmful effect on slats, canvas, or leather belting. The amount of oil used is about 0.28% to 0.30%.

Those who the oil in the finisher beater chamber prefer this method because it requires no air compressor, eliminates all loss of oil through fan drafts, and calls for less cleaning of machine parts. The amount of oil used on regular cotton stock is about 0.25%.

In plants using waste mixtures and very low grades of stock, it has been found that considerably higher percentages of oil are required than are necessary in mills which are using higher grades of cotton.

Equipment for applying the oil needs no maintenance beyond an occasional cleaning and renewal of the oil supply. The metering control feed is easily adjustable and will maintain the percentage of oil within very close limits of the amount required. Each unit is independently controlled and oil is applied only when stock is being fed into the machine.

Death to the Silverfish

How the knitter and weaver of rayon can eliminate this destructive pest

UNLIKE THE MOTH, the silverfish is seldom seen. It lurks in a hiding place by day; does its wandering at night. Occasionally, when one moves an object behind which a silverfish is lurking, he will catch a quick glimpse of the little wingless, three-tailed pest as it darts from a recess thus exposed to some other out-of-sight spot. Usually it thwarts all attempts to catch it. Like the moth, the silverfish causes plenty of damage to textiles—both in the home and in the mill. For food, it is partial to starches and sizings or finishes containing starch, dextrin, gum gelatine, etc. To appease its appetite for these foods, the silverfish will eat holes in fabrics which have been sized or finished—particularly rayon fabrics.

Just recently a manufacturer of viscose rayon hosiery discovered that silverfish had invaded his plant and were eating holes in the stockings. He had read in the January issue of TEXTILE WORLD that this insect thrives in warm, damp places, and is likely to attack fabrics containing a considerable amount of organic finish. He is knitting dry and does not use any water trough or damp wicks; therefore, the surplus leg stock and gray room stock contain practically no moisture. "How can we control and eliminate this serious menace to our product?" was the SOS (Save Our Stockings) he sent us.

Our technical department responded to the call. We sent the inquirer a picture of a silverfish so he could recognize the enemy for what it is. (See accompanying illustration for reproduction of artist's drawing.)

Speaking of "reproduction," we told him that nobody has made a complete study of the life cycle of the silverfish. However, Government entomologists state that apparently the females lay from 6 to 10 eggs. In heated buildings, this egg laying may occur at all seasons of the year. In cool weather, the eggs may not hatch for a month or two; in warm weather, in a week or so. Except for size, the newly hatched silverfish resembles its parents in appearance. Although the silverfish loves to eat, it can live for nearly a year without food. Let it have well-sized rayon fabrics—knitted or woven—to eat, and it will live for two or three years.

As long as an adequate supply of starch, dextin, gum, gelatine, or sugar is available, silverfish will not attack either cotton or rayon as such; that is, fabrics which do not have either a starch, gelatine, or similar finish on them. However, as is true with most insects, under favorable conditions, silverfish multiply rapidly, and before long there is a population exceeding the food supply. So in search for food, the insects will then attack cellulosic materials to still their hunger even though they contain no food value for them.

TO CONTROL AND ELIMINATE THE SILVERFISH, we advised the inquirer to follow one of the methods recommended by the U. S. Department of Agriculture, in Leaflet No. 149, entitled "Silverfish." These recommendations are as follows: "Silverfish are controlled most cheaply by the use of a poisoned bait. An excellent bait can be made of the following ingredients in the proportions indicated:

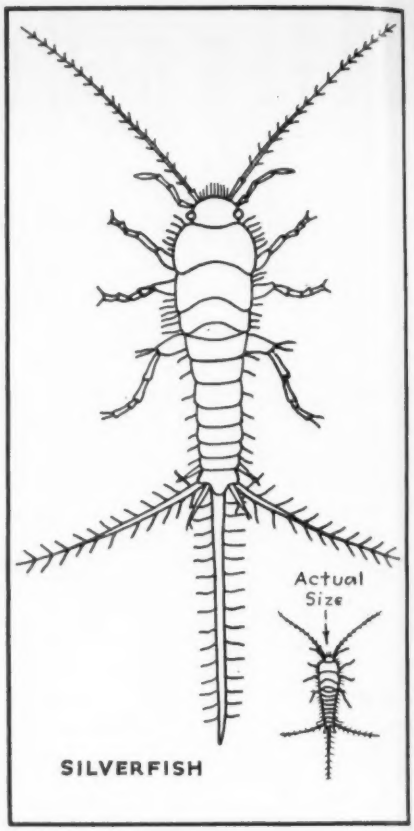
Oatmeal (ground to flour)	100 parts by weight
White arsenic	8 parts by weight
Granulated sugar	5 parts by weight
Salt	2½ parts by weight

"Mix together dry, the oatmeal, white arsenic, sugar, and salt. Moisten the mass and mix thoroughly to bind the substances together. Then thoroughly dry the bait to prevent mold, and grind it into small bits so that it can be scattered easily.

"Sodium fluoride powder can be substituted for the white arsenic in the above formula. If the substitution is made, simply mix the materials thoroughly, but do not add moisture.

"Place about a teaspoonful of the bait in each of several, or many, shallow cardboard boxes, such as necktie boxes, distribute the boxes near or in the haunts of the silverfish, and cover each box loosely with a crumpled sheet of paper.

"Pyrethrum powder dusted or blown into places frequented by silverfish is also useful. For quickly killing the hordes of silverfish found overrunning basements and furnace and storage rooms, spray with a saturated solution of paradichlorobenzene in carbon tetrachloride. As the liquid evaporates, the paradichlorobenzene recrystallizes as a fine snow over the objects sprayed, but will, in turn, evaporate, causing no injury. The best results are secured by keeping the rooms closed for 24 hr. after spraying."



Artist's conception of silverfish, enlarged and actual size.

In reference to these methods one authority states:

"The cheapest, no doubt, is the poisoned-bait method, but paradichlorobenzene dissolved in carbon tetrachloride is very effective. The carbon tetrachloride will itself kill any silverfish caught in the spraying; and the paradichlorobenzene, which is left behind after the carbon tetrachoride has evaporated, will gradually volatilize and be effective for some time. This treatment will not harm the most delicate fabrics.

"The chief thing is find out just what part of the mill is infested with silverfish and then to clean house."

Finally we wish to assure our readers that it is permissible under some circumstances to call silverfish "brats." There are two species of these insects. The more common has a highfalutin Latin name (*Lepisma Saccharinal*). The other, which we suspect was doing the damage in the hosiery mill, is called the "fire brat," or, for short, just "brat."

How Many Drawing Processes?

Cotton mill men are now asking whether reduction to one process is feasible

THE QUESTION which many progressive cotton mill men are asking today is: "Will one process of drawing produce yarn of sufficiently high quality for our class of work?" It is not many years ago that they were asking whether two processes of drawing were sufficient. The two questions are almost parallel. Hence, any information obtainable pertaining to the reduction from three to two drawing processes will be applicable and useful in the further reduction to one process. Fortunately, results of tests are available which were made when drawing process reductions were first considered.

A brief summary of these test results indicates that the three processes of drawing gave a warp yarn 4.8% stronger, the break factor was 5.7% higher, and the maximum variation in yarn number was 2.4% less than that produced from two-process drawing.

As the elimination of one drawing process affected the strength and uniformity to such a slight degree, many "quality" mills were willing to sacrifice this strength and uniformity, to obtain the resulting savings in labor and maintenance costs.

A large part of these losses in strength and uniformity was recovered by subsequent improvements in methods and design—more careful selection of stock; better mixing and blending of this stock; reduction of beats per inch on pickers; improved drafting by substitution of cork rolls for metallic drawing rolls; better control of card, drawing, and roving tensions; and many improvements in roving and spinning frames.

An analysis of what happens to sliver as it passes through one or more processes of drawing will aid in determining why additional drawing processes are not more effective in improving yarn strength and uniformity.

Card sliver that showed a maximum variation of 21.9% in weight per yard was doubled six ends up, and the delivered breaker drawing showed a maximum variation in weight of 11.1% per yard.

This breaker drawing was doubled six ends up, and the second drawing showed a maximum variation of 9.0% per yard. Thus, while the first drawing process reduced the yard-by-yard variation of the card sliver by 10.8%, the second drawing reduced the variation of the drawing only 2.1%. Further drawing processes will show a progressive loss in the reduction of yard-by-yard variation. This comparatively greater evening effect of the first drawing process over subsequent drawing processes partly explains why three processes showed but a slight improvement over two-process drawing. It also accounts for the success which some mills have had with one-process drawing.

TO COMPLETE THE PICTURE of sliver variation, it is necessary to determine the short-length variations which occur within each yard of sliver. For this purpose, the same slivers that were sized for yard-by-yard variation were analyzed subsequently for inch-by-inch variations.

Card sliver showed an inch-by-inch maximum variation of 5.3%, the first drawing showed 11.3%, and second drawing 16.7%. This progressive increase in short-length variations partially explains why the theoretical benefits of additional drawing are not obtained in actual mill practice.

The second important function performed by the drawing frame is the straightening and paralleling of the fibers. There are no established standards for measuring the degree of this parallelization, but its effect is easily discernible by the eye. Card sliver shows but little of this straight and parallel arrangement of the fibers. The first drawing shows a marked increase. And the second drawing sliver shows but a slight increase over the first drawing.

Comparative tests have been made in several mills on one- and two-process drawing. The tests were made on warp yarns ranging from 20s to 36s to show the effect on yarn strength and yarn-count variation. In one series of tests, two-process drawing yarn showed 5.1% greater breaking strength than one-process yarn, 4.3% higher break factor and 0.8% greater maximum variation. A second series of tests showed two-process yarn with 1.7% greater skein strength, 0.4% higher break factor, and 0.7% less variation. A third series showed two-process yarn with 3.4% greater breaking strength, 3.2% higher break factor, and 1.9% less variation. An average of all tests on all counts of yarn gave the following: two-process drawing showed 3.4% greater skein strength, 2.6% higher break factor, and 0.6% less variation.

The tests can be considered as typical, with stock, equipment, and organization general to mills following the most improved methods of manufacture. These figures on a percentage basis make it a simple matter for any mill man, who is contemplating a reduction in his drawing processes, to determine in advance what percentage of strength and uniformity he must expect to sacrifice.

ENDS DOWN IN SPINNING showed but slight advantage in favor of two-process drawing. No difference could be detected in the appearance of the finished toods, and laboratory tests on products from both processes were satisfactory. Impartial consideration of all factors involved indicates that the reduction in labor and maintenance costs more than offsets the loss in yarn strength and uniformity.

It is no doubt true that yarn strength and uniformity today on two-process drawing equal or exceed those of yarn produced in the days of three-process drawing. The losses indicated in reducing to one-process drawing need not be considered as necessarily permanent losses; careful attention to details makes it possible to regain a large part of these losses; and there is justification for the belief that further improvements in methods and equipment will be made if, and when, one-process drawing comes into general use. Hence, there is real hope that reduced labor and maintenance costs in drawing can be obtained without any eventual loss in yarn quality.

[*Readers of* TEXTILE WORLD *are invited to send in their ideas on this important question of "How Many Drawing Processes?" to the Mill Men's Round Table.* *See page 115 for further details regarding this new department.*]

Southern Hosiery Men Face Facts

IN THE ABSENCE of the president, Robert T. Amos, of High Point, N. C., Carl V. Cline, vice-president of the association, ably assisted by the executive secretary, Taylor R. Durham, put the Southern Hosiery Mfrs. Association through a double-quick program at Biltmore Hotel, Atlanta, Ga., June 11. The program was packed with considerations of questions of utmost importance, and the 200 members and visitors gave close attention to the discussion of financial and economic questions, WMC directives, and WLB problems affecting the hosiery industry.

Robert Strickland, president, Trust Co. of Georgia, warned his listeners in the opening speech that serious times are ahead. Not only must debts incurred in private business be liquidated in the years that lie ahead, but the tremendous public debt now accruing will have to be met by high production, sacrifice and hard work.

Other speakers were Dr. J. J. Carney, Jr., War Manpower Commission; Paul H. Saunders, regional attorney, War Labor Board; Capt. D. C. McLeod, of Philadelphia QM Depot; and H. Lint, of the QM General's office.

Taylor R. Durham discussed the difficulties facing the industry and analyzed the services performed by his office. He said in part: "Perhaps the most confusing and impractical regulation that has been issued for a long time was MPR-339. In addition to the short period allowed between its publication and its effective date, it contained many provisions that were impractical and others that had no sound basis from the standpoint of serviceability. With the exception of failing to include a provision for adequate differentials for branded lines, however, the Price Schedule is fairly satisfactory to the industry. . . . Every thinking person, we believe, fully realizes that the only possible way in which disastrous inflation can be avoided is for the Government authorities to impose and enforce restrictions both on commodities and wage rates. . . . We have since obtained a reasonably definite promise that before any other schedule affecting our industry is issued, a selected group of practical hosiery manufacturers would be invited to examine such a schedule in detail in order that any impractical or unreasonable restrictions might be eliminated."

Officers elected for the coming year are as follows: President, Carl V. Cline, J. A. Cline & Son, Hildebran, N. C.; vice-president and chairman of Full Fashioned Division (re-elected), Carl S. Kincaid, Magnet Mills, Clinton, Tenn.; vice-president and chairman of Seamless Division, Charles McLellan, Alden Mills, New Orleans, La.; treasurer (re-elected), Fritz Seifart, Hudson Silk Hosiery Co., Charlotte, N. C.; new directors elected: Hugh M. Grey, J. R. Gaither, R. C. Powell and Leslie F. Quinlan.

Letters to the Editor

"Stand Up and Be Counted"

NEW YORK, N. Y.

Editor, TEXTILE WORLD:

I have just read the editorial in your May issue entitled "Stand Up and Be Counted."

I want to congratulate you on the ideas which you expressed and the courage it took to do so. I sincerely believe it is one of the finest expressions I have yet read on the attitude of mind which we must all achieve if we are to win the peace this time.

FESSENDEN S. BLANCHARD, President
Textile Research Institute, Inc.

* * *

CHICAGO, Ill.

Editor, TEXTILE WORLD:

Congratulations on that fine editorial in your May issue. ("Stand Up and Be Counted," page 57.) You are 100% right, and it's time for a showing of hands. RALPH O. MCGRAW, Editor,
Industrial Marketing.

* * *

NEW YORK, N. Y.

Editor, TEXTILE WORLD:

I want to congratulate you on your wonderful editorial "Stand Up and Be Counted."

If you are having any reprints made would greatly appreciate your sending me some. Would also suggest your sending copies to the Members of Congress and all bureaucrats in Washington.

AARON NEUMANN

* * *

WASHINGTON, D. C.

Editor, TEXTILE WORLD:

The May copy of the TEXTILE WORLD just passed over my desk. I happened to glance at "Stand Up and Be Counted." Congratulations!

If these fundamentals about which you wrote are not followed, America and all the Allies might just as well start preparing for World War III. A greater tolerance must be exercised by all if the human race is to continue to inhabit the earth.

A COLONEL IN Q. M. C.

* * *

Absenteeism

SYLACAUGA, ALA.

Southern Editor, TEXTILE WORLD:

I am having a lot of calls for the reprint of your absenteeism article and, in re-reading the whole set-up in your magazine, it seems to me that the editorial written by Douglas Woolf carries so much weight with it that if the two pieces could be put together the whole article would be more forceable. Certainly the editorial would have the effect of setting off my article.

HUGH M. COMER, *Executive*
Vice-president,
Avondale Mills.

* * *

"I Am But One . . ."

GREENFORD, ENGLAND

Editor, TEXTILE WORLD:

I want to thank you so much for your follow-up editorial on "It All Depends On Me" (printed under title of "I Am But One, but I Am One"—February, 1943, page 103.)

You have certainly produced a new and most powerful angle in "I Am But One, but I Am One," and I think nothing better has yet been written on this particular theme of Individual Responsibility.

My heartiest congratulations and good wishes.

ERIC L. COLSTON

(*Editor's Note:* Mr. Colston is the originator of the "It All Depends On Me" movement.)

WPB's Wool Blending Rule Cancelled

Civilian wool goods product limited now chiefly by manpower and machines

WPB'S AMENDMENT of June 7 to Wool Conservation Order M-73 cancelling the mandatory blending provision and thus more than doubling the amount of wool available for civilian woolen and worsted fabrics of 100% new wool content, marks a turning point in the wool goods war program.

Although primarily due to the improved position of the wool stockpile and to demands of the textile industry, the relaxation of the blending provision fitted into the current policy of the Administration, which is to avoid further civilian rationing wherever possible. The M-73 amendment carries the definite implication that wool clothes rationing can be avoided by permitting an appeal to be taken for more wool by mills which feel that their wool allocations are inadequate.

The woolen and worsted systems are now in a position almost identical with that which cotton and rayon have held, which adds up to saying that from now on the manufacture of civilian woolens and worsteds will be limited not by the lack of new fiber but rather by a deficiency of production facilities and manpower. Frank L. Walton, director of WPB's Textile Branch, assures civilians as much rayon this year as they had in 1939; and there still is no general shortage of raw cotton.

As to Government help with facilities and manpower, the industry can expect very little. Since the present wool-cloth production is considered adequate for comfort and health, the Textile Machinery Division of WPB does not plan any special move to provide additional manufacturing equipment. Division spokesmen take the position that the existence of a wool surplus does not justify a policy of providing machinery simply to chew up that surplus. This means that it will be largely up to the individual mills to make the internal adjustments to take advantage of increased wool allowance.

WMC's attitude toward the manpower problem of the industry is somewhat similar—that is, that Government has already gone as far as it intends to go and that the industry must work out its own manpower problems on the basis of WMC Reg. No. 4 of April 18, which re-classifies the textile industry and restricts transfer of employees to other occupations. It is freely conceded that this freezing of those now employed is not a complete solution.

Numerous suggestions are continually reaching WMC as to expedients to augment the manpower index in textiles. One such suggestion pertains to the possibility of much greater use of part-time workers. Some mills are finding it possible to get, say, three women to assume together the production of one person's full work week, giving married women with household duties a chance to divide on time, earn a little money and at the same time feel that they are actively engaged in the war. Officials who know the woolgoods industry best stress the importance of simplification of production in individual mills as a means of increasing the potential production of manpower already on the payrolls.

The amendment to order M-73 effects two major changes in the allotment of wool to manufacturers for civilian purposes. It increases the unrestricted wool quota for manufacture of worsted products from 30 to 70% of each manufacturer's average quarterly consumption of wool during the first half of 1941 and eliminates the 40% restricted quota which could be used if producers blended wool with other fibers. It also increases the unrestricted quota for woolen products from 5 to 50% based on the manufacturer's consumption during the same base period of 1941 and cancels the 25% quota previously limited to use in blended wool products.

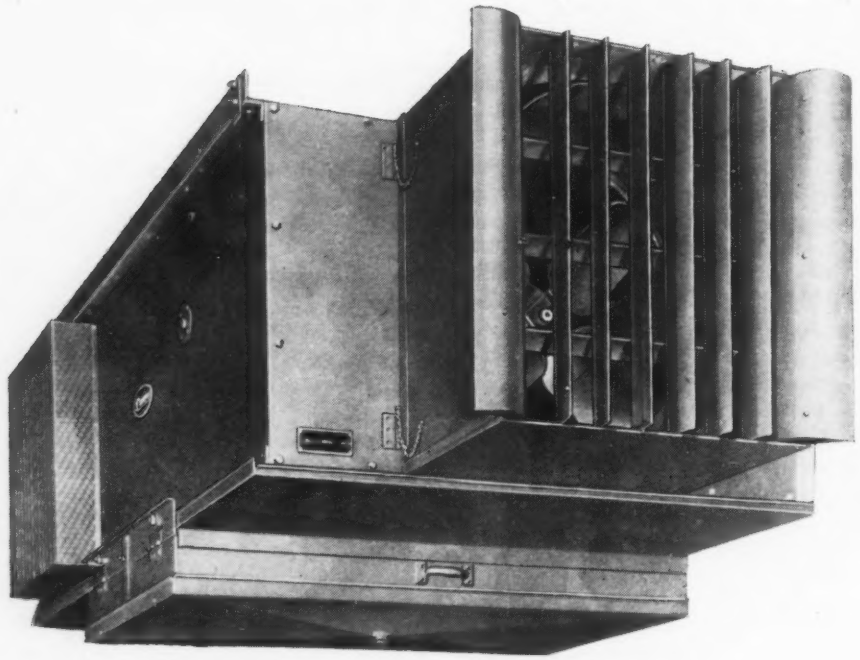
As WPB sees it, the effect of the action will be that manufacturers may now use their civilian quotas either for production of 100% new wool products or for blended yarns and cloths, as they please. They have nearly all the wool necessary to occupy their production facilities, which are not engaged on Government orders, in turning out yarn and cloth to make fall and winter clothing for civilians. Spokesmen for WPB's Textile Division called the writer's attention to the provision whereby manufacturers who feel that they can use more wool than the allotted quota are granted the right of appeal with the implied assurance that an increase will be granted if they make a satisfactory showing. Unused quotas may be carried from one period to the next.

Tremendous growth of the stockpile, due to keeping import sea lanes open, has placed the Government in a peculiar position as regards the domestic supply. The Department of Agriculture, which recently contracted to buy the entire domestic wool clip at ceiling prices for the duration of the war and two years thereafter is literally holding a wool surplus bag. It is remotely possible that the Government might authorize and implement additional wool goods capacity for some future Lend-Lease or export need. Barring that, the industry cannot appreciably increase its current rate of wool cloth production now, and the surplus of raw material will build up to mountainous size.

The Department of Agriculture reports that nearly all of the world's raw wool production is controlled at the present time by the United Nations. These nations have access to almost all of the Southern Hemisphere production because it is barred from the Axis by blockade. Australia, New Zealand and South Africa now produce about 1,700 million pounds a year and South America about 700 million pounds. Although the Axis and Axis-dominated areas produce only 15% of the world's wool, these countries in pre-war years accounted for close to 50% of the world's wool consumption.

The United States and the United Kingdom are the only two countries now importing wool in considerable quantities. Consumption in this country is at the rate of 1,100 million pounds a year, which is 400 to 500 million pounds greater than the 1934-38 average consumption. The Department of Agriculture states that there has been some increase in consumption in the United Kingdom, but because of strict clothes rationing and acute labor shortages, it probably is not so great as in this country. United Nations are now holding enormous reserve supplies of raw wool. Wool production has actually increased during war years. Total world production in 1942 was 4.1 billion pounds (grease basis) compared with 3.9 billion pounds in 1938.

The HUMIDIFIER



as a Production Tool

Higher machine speeds create problem; Bibb Mfg. Co. finds way to solve it

By HENRY L. GALSON and HARRY L. KEMPANER
Carrier Corp., Syracuse, N. Y.

TO INCREASE PRODUCTION has long been an aim in the textile industry. To achieve this, the trend has been to speed up machinery. These higher speeds have resulted in greatly increased power loads. As a result, the horsepower concentration per square foot of floor space has increased beyond standards used in the past for a given textile process. The additional heat liberated by this greater power load has caused the temperature in the mills to rise, thus causing human efficiency to fall off considerably. At the same time, a corresponding reduction in relative humidity has occurred.

These two factors, relative humidity and temperature, are closely related and physically interdependent. Their relation should be fully understood and they must be adequately maintained, since they are controlling factors affecting overall production, the quality of the products, and the workers' efficiency. To compensate for the loss in relative humidity, additional moisture must be evaporated in order to maintain the air at the required conditions. Thus, the problem becomes one of evaporating moisture into the air.

As the evaporation of moisture requires heat, and since this heat is largely supplied by the air absorbing this moisture, a proportionate amount of cooling can be accomplished by evaporation, depending, of course, on the initial moisture content of the air. If the air into which moisture is evaporated is already heavily laden with vapor, a small amount of evaporation and therefore a small amount of cooling is realized. On the other hand, if moisture is evaporated into lower humidity air, such as the outside air, an appreciable amount of evaporative cooling can be effected. Simple examples will illustrate this point.

Assume outdoor conditions of the air to be 95° F. dry bulb and 33% r.h. This condition is represented on the psychrometric chart Fig. 1 at "A." The outside air is humidified, moisture is absorbed along the line "AB" so that it leaves the humidifier at 73.5° F. and 93% r.h. The absorption of moisture has cooled the air 21.5° F. and upon being discharged from the humidifier into the room it will absorb heat produced by machinery, lights, people, and other sources, reaching a final condition of 84.5° F. and 65% r.h. as indicated by the line "BC." Thus humidification and evaporative cooling from 95° to 84.5° are accomplished simultaneously.

On the other hand, if no outside air is circulated and the room air is recirculated through the humidifiers, the effect would be as shown in Fig. 2. Starting with the room conditions of 84.5° F. and 65% r.h. as represented by "A," the air would be cooled by evaporation to 75.5° along the line "AB." Room heat would then be absorbed along the horizontal line to "C" until its humidity is reduced to the desired 65%. The resulting conditions are 87.5° F., 3° F. higher than when using outside air. This recirculated air is passed again through the humidifier and will advance further from "C" toward "D" unless checked by the control, resulting in a further rise in temperature until a heat balance is established. In recirculating air, humidification is accomplished, but cooling by evaporation is only partly realized.

It can be recognized from the foregoing examples that effective cooling is obtained when the air entering the humidifier is relatively dry. Each time the air is recirculated through a humidifier, the effective cooling is considerably reduced. Therefore, to obtain dry air for cooling, it should be drawn from the outside in sufficient volume to get the maximum evaporative cooling effect. The function of supplying outside air ventilation must be included.

ABOUT THREE YEARS ago Bibb Mfg. Co. had the problem of humidifying the spinning department of its cotton waste mill, at Macon, Ga. In this department the spinning of extremely short staple cotton requires a high degree of uniformity and close control of relative humidity. The concentration of air-borne fly is unusually severe.

To provide the desired conditions, Bibb Mfg. Co. expressed a desire to purchase unitary type humidifying equipment which embodied certain features that were not then obtainable. Such a piece of equipment, however,

was being developed by Carrier Corp. but had not yet been built or field tested. Based on field requirements and the original conception of the unit, a sample industrial humidifying unit was constructed.

Through the cooperation of Bibb, the unit was set up in a short-staple, cotton-waste, spinning-room section so that severe operating conditions would be encountered. The equipment was tested over a period of months so that it could operate under varying outdoor weather conditions. The results and performance of the equipment were tabulated so that a record was available of the complete test run. The conclusions thus obtained from this preliminary extensive test operation indicated that the industrial humidifying unit offered a solution to the textile air conditioning problem, with simplicity of application, reliability, uniformity of control, and economy of operation. As a result of the findings of this test run, Bibb decided to install a number of the units to make a complete installation in the entire spinning department of the cotton waste mill. An engineering survey indicated the proper number of humidifiers required. It was found desirable that the units could best be located along one wall adjacent to the windows, as shown in Fig. 3, (on next page) thus distributing the humidified air across the 45-ft. wide spinning room. The equipment was thus positioned above the outside aisle, where it is best accessible.

The units were installed during working hours, without interrupting the mill production. Sectional in construction, permitting each light section to be easily handled, the units were put in place without elaborate scaffolding or supports. The short air ducts connecting the intake of the industrial humidifiers to the outdoors were made to the upper sash of the windows. These openings were equipped with inlet screens. Access doors were provided to permit blowing off any accumulation of lint that might collect on the inlet screens. All piping was installed along the outside wall, and convenient manual shut-off valves were provided for each of the humidifiers.

To insure a lint-free water supply to the units, and to provide continuous service, removable lint screens were installed in the water tank and a filter was selected that permitted periodic cleaning and flushing out without interruption of the service or disassembling of any parts. The auxiliary equipment, consisting of a make-up water tank, centrifugal pump, water filter, and thermostatically controlled water heater, was located on the floor below.

Since the temperature of the water circulated is above the dew-point temperature of the room, no sweating of the pipes was encountered and no pipe insulation was required.

RESULTS OBTAINED. On a typical summer day approximately 100 lb. of vapor was added to the air per hour per unit. Based on this performance, the entering air from outdoors was lowered about 18° F. by evaporative cooling. The relative humidity within the spinning room was maintained at 65% and held at this correct relative humidity throughout the entire room. Not only did the working conditions for the people and product improve, but the uniformity of the air conditions maintained increased the over-all output of the spinning machines. Thus, the humidifier proved itself a valuable tool to increase production. It cleaned the air and provided adequate ventilation at all times. Since no free moisture is discharged from the unit, no wetting down on the machinery is possible.

Actual results obtained from this installation can readily be seen from the recorder charts (Fig. 4). Chart I indi-

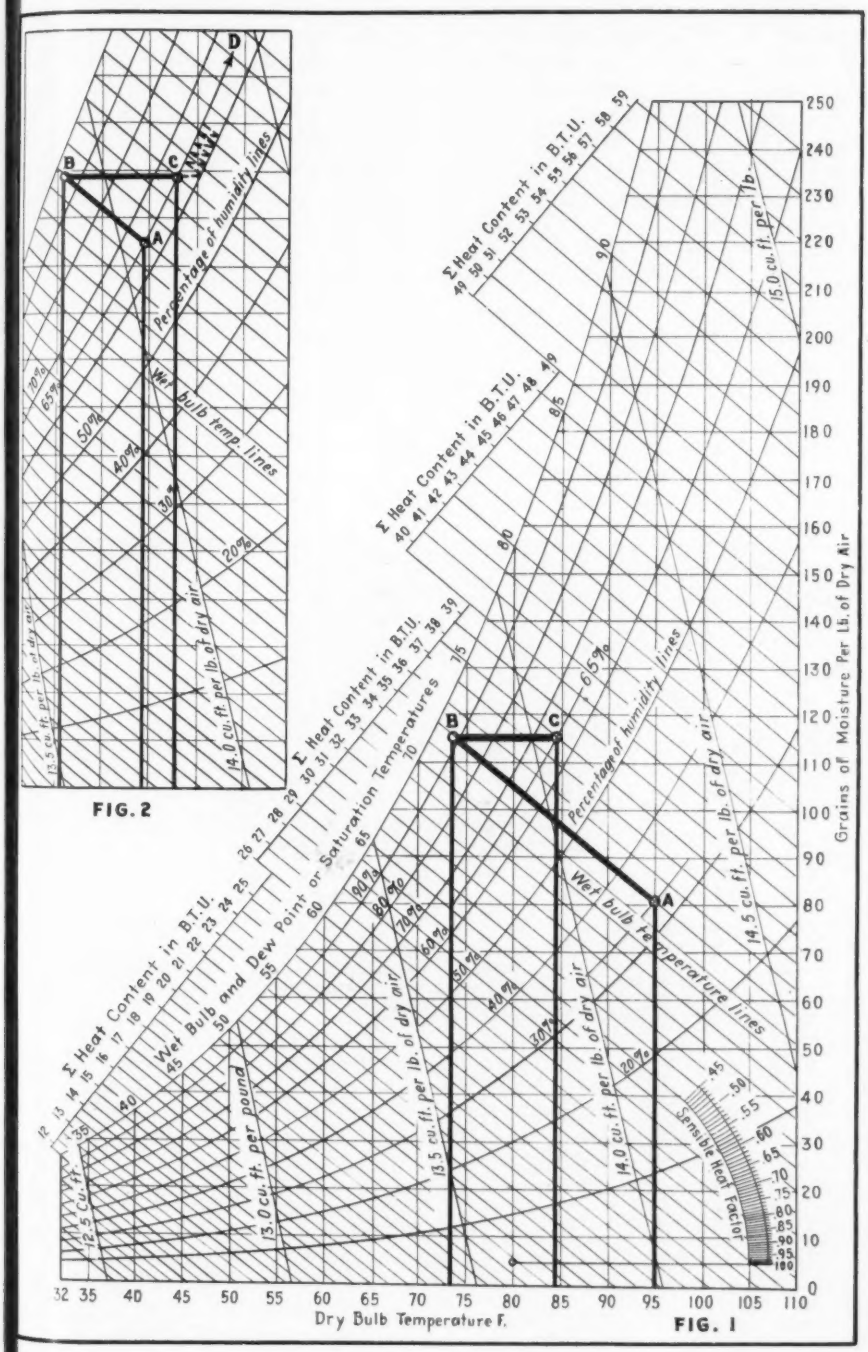

Σ Heat Content in B.T.U.
Wet Bulb and Dew Point or Saturation Temperatures
Dry Bulb Temperature F.
Grains of Moisture Per Lb. of Dry Air
Percentage of humidity lines
Wet bulb temp. lines
Wet bulb temperature lines
Sensible Heat Factor
14.5 cu. ft. per lb. of dry air
14.0 cu. ft. per lb. of dry air
13.5 cu. ft. per lb. of dry air
13.0 cu. ft. per pound
15.0 cu. ft. per lb.
A
B
C
D

FIG. 1

Fig. 1. Psychrometric chart showing humidifying and cooling effect obtained when outside air is humidified.

FIG. 2

Fig. 2. Section of psychrometric chart showing that less cooling takes place when air is recirculated.

cates temperature and humidity recordings taken before the industrial humidifiers were installed; that is, spray heads only, as governed by their automatic control, were in use. The controls were set for 65% r.h. Note that the relative humidity varied between 60% and 82%. Also, during this same period of time simultaneous temperature recordings indicated a temperature variation of from 86 to 98° F. Due to "on" and "off" control of the spray heads and no circulation of positive introduction of outside air, close control of temperature and humidity was not realized.

Charts II and III (Fig. 4) show recordings of relative humidity and dry-bulb temperatures when industrial humidifiers are in operation. The two charts are essentially the same except that No. 3 chart was obtained by having the recording instrument spring suspended to eliminate vibration effect on the pen of the instrument. The results shown on these charts indicate the effect of evaporative cooling after the units were put into operation and unit control system was in use. The controls were set for 65% r.h. Note how constant are the conditions of air when the system operated over a 24-hr. period. The temperature also was maintained at 93% F.,±2° F. A marked contrast shows up between Chart I and Chart III, indicating a definite improvement, even though the outdoor temperature was higher than when test No. 1 was made.

The industrial humidifiers were designed for low power consumption. The low resistance to the air flow encountered in the units makes it possible to use propeller type fans designed for high efficiency direct connected to motors. The power required for the fan is 0.2 hp. per 1,000 c.f.m. circulated. The water requirement is 0.7 g.p.m. per 1,000 c.f.m. circulated, the pump pressure being only sufficient to raise the water to the top of the unit from where it circulates by gravity. In the overall picture of fan and pump power expended for humidification and evaporative cooling by any number of industrial units is only a small fraction of the power consumption of the mill.

THE UNIT HUMIDIFIER consists of three major sections: (1) the air intake section, (2) the humidifying and fan section, and (3) the air distributing section. The unit is of sectional construction for economical production and to facilitate its installation. The assembled weight is approximately 800 lb. Air is drawn into the intake, pulled through the humidifying section by the fan, and is discharged through adjustable air distributing outlets.

Air may enter the inlet section from the outside or it may be re-circulated from the room, as controlled by two segment dampers. These are interconnected by a pantagraph arrangement and are actuated by a damper motor under automatic control. The recirculated air enters the unit through two lint catchers, located at both sides of the inlet section. They are made of perforated metal arranged in convolutions. This design has a large surface area and low resistance. A condensate drip pan is provided below the inlet section, drained into the main drip pan located under the humidifying and fan section.

The main humidifying section consists of a housing inclosing the humidifier elements, reheater coil, and a propeller type fan and motor. It is provided with a removable drip pan at the bottom. The flooding pan, located at the top of the section is in contact with the upper edges of the humidifying packs. It is equipped with plastic orifice inserts for water distribution. A gradual control of the water flow to the humidifying packs is provided by the use of two metering weirs. The pan is covered by a gasketed lid to exclude all contamination with lint.

The humidifying packs are specially treated wood fiber fillers contained in metal frames which slide in vertical

Fig. 3. Battery of unit humidifiers installed along wall in spinning department of Bibb Mfg. Co. cotton waste mill

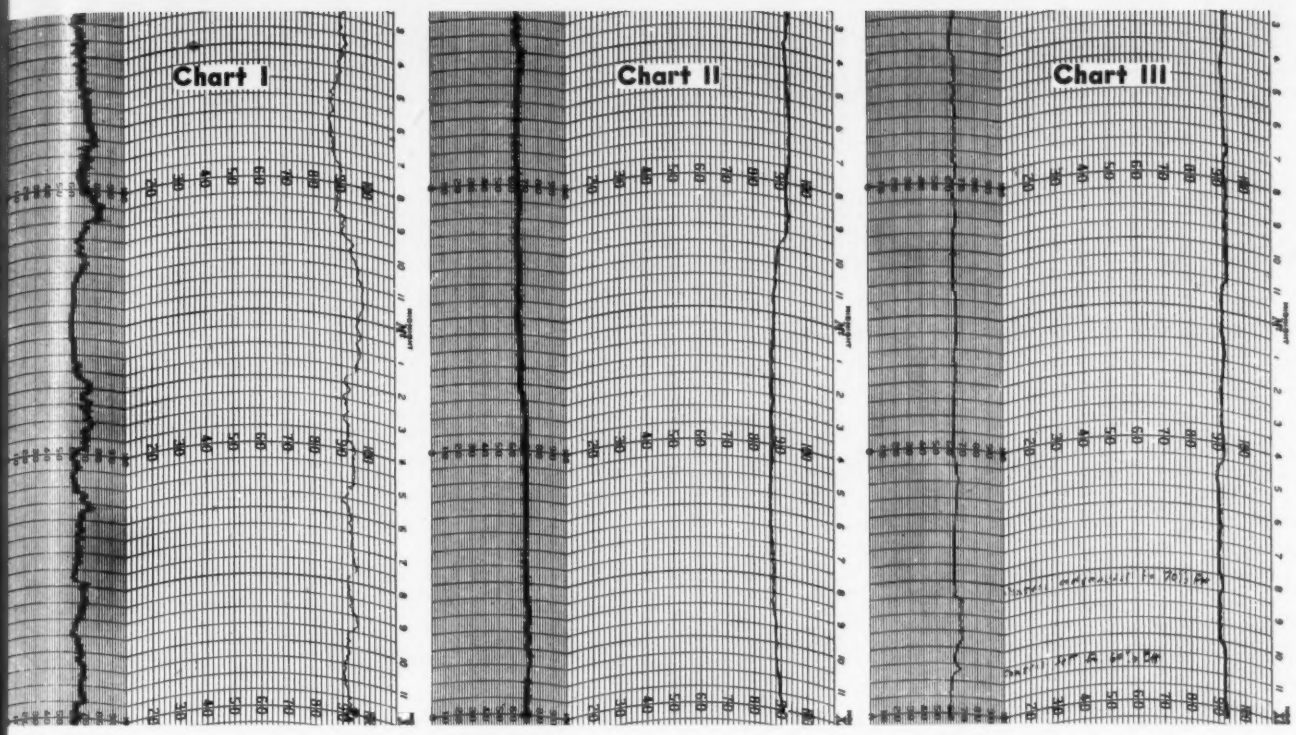


Fig. 4. Chart I shows temperature and relative humidity recordings before unit humidifiers were installed. Charts II and III show recordings with humidifiers in operation. Comparison of Chart I with either Chart II or Chart III reveals the evaporative cooling and more uniform temperature and relative humidity obtained with the unit humidifiers.

guides, and are accessible from the bottom of the unit. Air is drawn through the wetted packs which provide a high degree of humidification, and simultaneously cool the air by evaporation of the moisture. The packs offer only low resistance to the air flow and they also act as scrubbers to remove airborne dust which is washed down with the surplus water.

The humidifier section contains an efficient reheater coil to provide heat when room load is inadequate to maintain the required temperature. It is of extended surface type, with wide fin spacing to give low air resistance and be easily cleanable. The propeller type fan designed for low power consumption is direct connected to a totally inclosed motor located within the section.

The main drip pan is located below the humidifier fan section and is mounted on ball bearing rollers to give easy access to the humidifying elements.

The air distributing section is a short outlet duct attached to the front of the humidifier-fan section by means of hinges. It is easily swung to one side or the other to permit full access to the fan and motor. The section is provided with vertical and horizontal deflector vanes, permitting directional control of the air discharge and thus making it possible to adjust the air distribution to suit requirements.

Maintenance of the units has fulfilled the expectation of low cost and simplicity of service. Lint catchers are easily reached, and special lint cleaning tools for the removing of lint during operation are provided. Because of the large quantity of lint encountered in cotton spinning, the catchers require cleaning once each shift, and therefore their accessibility and the fact that the cleaning can be done without the shut-down is of major importance.

Periodic cleaning of the humidifying packs is required, the frequency depending on the amount of fly encountered in the textile process. The packs are accessible from the bottom of the unit by moving the drip pan on its ball bearing rollers.

The life of the humidifying cell, operating 24 hr. per day, is approximately one year, or more, depending upon individual mill conditions. The fillers are held in metal containers. They are easily renewed and are inexpensive. Also the whole inside of the unit, as well as the heating coil, is accessible from the bottom. The routine care of the fan motors and the keeping of the interior of the units clean requires very little time, and needs to be done only after long intervals of operation.

AUTOMATIC CONTROLS for accurate regulation of temperature and relative humidity have been developed for special use with the unitary humidifiers. The instruments are actuated by compressed air for simplicity of modulation. The sensitive control elements are panel mounted, and the whole assembly is rugged and factory tested. One panel is used to control several units in a group. All actions of the control elements are indicated to the operator by pressure gage readings.

The panel thermostat regulates the proportion of outside and return air circulated by each unit, thus permitting optimum utilization of evaporative cooling. The humidity is regulated from the hygrostat by modulating the water supplied to the units. Each unit is equipped with an individual dew-point control which can override the thermostat and throttle the volume of air drawn from the outside, if required.

In cold weather, or when the machinery load is not sufficient to maintain the desired temperature, the reheating coils in the units are gradually opened. These coils are operated in sequence with the outside air dampers to maintain the desired uniform conditions of air. Over-humidification is prevented by action of control elements on outside air dampers if the humidity of the outside air is excessive.

The controls do not require a change-over setting from winter to summer or for seasonal variations. They automatically adjust to the needs of constant relative humidity under variable heat loads within the mill and under variable outdoor conditions.

Processing Government Fabrics

Hosiery dyeing and fabric finishing discussed at recent A.A.T.C.C. meeting

DEVELOPMENT OF AN AGEING TEST for sulphur-dyed cotton fabrics, need for suitable preparation of fabrics before dyeing, handling of Nylon and acetate fabrics to meet Government specifications, and elimination of defects in hosiery dyeing and finishing were subjects discussed at a meeting of the Piedmont Section of the American Association of Textile Chemists & Colorists held in Winston-Salem, N. C., June 5.

Ernest L. Caswell, superintendent of Cloverdale Dye Works, Inc., High Point, N. C., discussion leader of the hosiery dyeing group, turned the meeting over to J. Vaughn Boone, of Geigy Co. who described a number of ways to eliminate dyeing and finishing defects common to the trade. According to Mr. Boone, tiger stripes experienced in dyeing hosiery in Army summer tan shade can rightly be attributed to yarn differences, but it is too late to change yarn after the hose is knit. His questioning of yarn manufacturers has revealed that they attribute this defect to uneven tension of the yarns in the mercerizing bath. There seems to be little that can be done to the dye process to eliminate tiger strips.

Good dyeing practice requires selection of a penetrant that conditions the bath, gives quick and thorough penetration, does not lose its wetting-out properties at high temperatures, gives a thorough scouring action to relieve the goods of grease and dirt, and has a retarding action in conjunction with the dyes.

Due to fastness requirements choice of dyes is limited. If only the proper shade were required, cheap directs that boil off and on easily, and exhaust slowly and evenly, would be a good choice. Colors having these properties are generally of poor fastness to washing; therefore, the next best thing is to control dyebath exhaustion by chemical means. By carefully establishing and maintaining the alkalinity of the bath, by salting slowly, by using retarders, and by allowing ample time for the shade to build up to bath exhaustion, better results can be obtained.

Beat-out streaks in hosiery have caused considerable trouble. Beating-out should be done in a weak solution of the same penetrant used in the dyebath, keeping it slightly on the alkaline side. Even this practice will show beat-out streaks if the damp goods are allowed to lie for any length of time or if entered into a bath with dye already present. This is especially true of fast-exhausting colors, because the color will start feeding on the wet portions with the dry part holding back several minutes. A good practice to eliminate this trouble is to wet out goods at 120° F. before adding the dye, and in cases where goods have been beat out for some time let them run a few minutes at 120° F. before adding the regular penetrant. This unsaturated water bath will pull the excess penetrant off the wet portion, giving a much more uniform wet-out.

Dyers of Navy black were advised to replace the restricted blacks with after-treated 90% blacks. These dyes are more expensive, but they give superior dyeings with less trouble.

Variation in the dyeing of yarn of 50% cotton and 50% wool can be attributable to lack of uniformity in the wool and to the overloading of the dye machines. The scouring operation for wool-cotton mixtures can be improved by scouring oils from the wools with soda ash and soap to get a more uniform base. Union dyeings have come to the fore with the passing of random chrome-dyed wool, because of more consistent results and a better finished hose. In some cases directs which stain the wool heavily are used, but it is found best to include neutral dyeing wool colors in the formula.

FABRIC FINISHING. Sidney M. Cone, manager of Proximity Print Works, Greensboro, N. C. and M. McGee Calhoun, dyer of Erwin Cotton Mills Co., Couleemee, N. C. headed by the forum on the finishing of Government fabrics. In the group discussion, it was agreed that mineral oil present in tallows used for warp sizing could not be removed and resulted in spotty finishing.

The suggestion was made that some special attention be given to the size content of warps in Government fabrics both by the manufacturer and the Quartermaster Corps so that finishers would not have to adjust size content.

It was the consensus that proper preparation of the goods before dyeing is the most important factor in the dyeing and finishing of Government fabrics. In discussing mercerization before or after dyeing, it was generally agreed that it should be done before dyeing when using the continuous dyeing process. In reply to an inquiry as how to keep selvages of the 6-oz. twill from rolling, one member suggested the use of a 16-end basket weave selvage, and another member suggested a pneumatic selvage guide on machines. In answer to a question on Sanforizing speed, it was agreed that for heavy twills a speed of 60 to 70 yd. per min. is practical.

John B. Neely, superintendent dyeing, Burlington (N.C.) Mills Corp. and E. R. Hopkins, superintendent of Stonecutter Mills Co., Spindale, N. C., spoke on the dyeing and finishing of rayon and Nylon military fabrics.

Gradual development of the techniques of handling and finishing fabrics of Nylon and acetate have been made, E. R. Hopkins told one group. The unusual characteristics of Nylon so little understood a short while ago made specifications and standards difficult to determine or meet. Progress has been made in handling Nylon and acetate for Government fabrics in all phases of manufacturing and handling. Permanence of finish under a variety of climatic and field conditions is necessary since parachutes and other equipment must be operated from the Arctic to the Equator. Such finishes have been difficult to obtain.

T. R. Smith, president of the association, is chairman of the committee on the ageing tests for sulphur colors that was attended by Lt. Col. Frank N. Steadman, Philadelphia Quartermaster Corps; C. A. Ryberg, associate research director of the A.A.T.C.C.; and other interested members of the association. No definite conclusions were reported from this committee, although discussions continued throughout the day.

The banquet held in the evening was presided over by C. Norris Rabold, chief chemist of Union Bleachery, Greenville, S. C., and chairman of the Piedmont Section. William McLaurine, secretary of the American Cotton Manufacturers Association, was the guest speaker.

TEXTILE EQUIPMENT NEWS

Electronic Sewing Machine

Electronic sewing machine for use in fabricating coated fabrics (RCA)

An electronic sewing machine that uses radio-frequency current instead of a needle and thread to join plastic materials, has been developed by RCA Victor Division of Radio Corp. of America, Camden, N. J. Although still in an experimental stage, it shows possible application in the manufacture of war equipment, especially in the making of raincoats and caps, weather balloons, and etc. A thin, solid seam that is air- and water-tight is "stitched," creating a bond that is stronger than the material itself.

Thermoplastic coated fabrics to be sealed, or "sewed," are fed across a table top through two small rollers which serve as the "needle." A small radio frequency generator is connected to these rollers. As they pull the material along, they cause a concentrated beam of radio frequency current to pass through the material. Heat is generated by a dielectric loss, or, in other words, by the struggle of the current to get through the closely packed molecules of matter which compose the material. The heat, together with a very light pressure causes thermoplastics to fuse, or weld, in a tight bond.

Somewhat similar in appearance and operation to the conventional sewing machine, the electronic device derives its heating current from a low-power oscillator. A small electric motor with foot pedal control drives the rollers. Ordinary alternating current of 110 volts supplies the power for both the motor and the oscillator. Tests have revealed the electronic machine as an effective instrument for the handling of such thermoplastics as Vinylite, Koroseal, and Pliofilm.

Dryer for Knit Goods

Dyeing technicians of the Textile Unit of American Viscose Corp., working in cooperation with the engineering staff of Proctor & Schwartz, Philadelphia, have developed a new type of drum dryer for use in drying and finishing warp-knit and circular-knit fabrics. The new machine uses a principle radically different from that currently in common use in the United States. It is stated that the drum dryer not only gives improved results on fabric stability or in producing fabrics that are more resistant to shrinkage and stretch, but also reduces the cost of drying and finishing warp knit and circular knit textile fabrics.

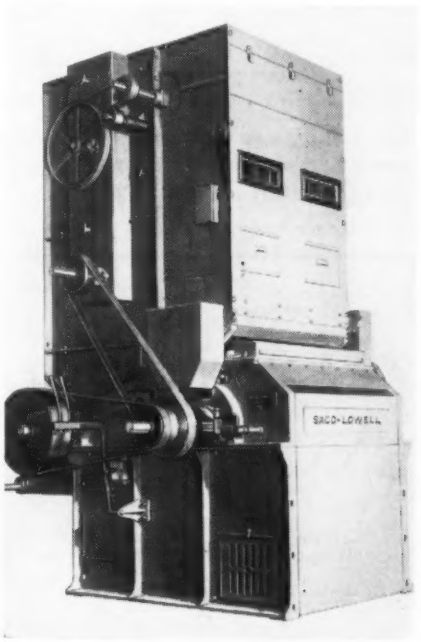
The principle used in the new machine involves the drawing of hot air directly through the knit fabric. At the same time, by the use of an overfeeding device, longitudinal fabric stretch is controlled; and, by means of a spreading mechanism and a fabric blanket, lateral fabric stretch is controlled. One of the new machines has been built by Proctor & Schwartz and is now in commercial use in a textile mill, but the shortage of needed critical materials will probably delay the manufacture of additional machines until after the war.

New Feeding Unit

Development of an improved feeding unit to be used with the No. 12 Lattice Opener and Cleaner, has been announced by Saco-Lowell Shops, 60 Batterymarch St., Boston. This feeding unit, it is stated, feeds the distributor supplying the pickers at a rate free from variations in amount or density, hence eliminating the need for an overflow system for handling excess cotton frequently supplied by the fluctuations in flow found in other systems.

A new feeding unit is attached to the No. 12 Lattice Opener by adding a Control Reservoir and a No. 11 Dust and Waste Extractor. The reservoir is much larger than that usually used with other equipment and contains a sensitive rake and mercoid switch, a set of spiked feed rolls and a drive assembly with ¼ hp. motor. Control of the motors driving the feeders and the feed table in the opening room is through the mercoid switch that is actuated by the rake.

The reserve box section of the No.



No. 12 Lattice Opener with new feeding unit (Saco-Lowell)

11 Dust and Waste Extractor contains a cage and fan section. This reserve box is fitted to the front side of the screen and fan section so cotton discharged by the cage section falls into the large cotton box. The reserve box holds a sufficient amount of cotton to provide a uniform feed to the pickers. The mercoid switch controls the feed from the opening room, thereby providing efficient control over the flow of cotton to the reserve box. This arrangement of equipment eliminates the use of return feed systems in an opening line.

Variable-Speed Drive

Of unique design is the Master Speedranger, a variable-speed drive made by Master Electric Co., Dayton, Ohio. The unit consists of an all-metal variable-speed device built integrally with a constant-speed electric motor. The Speedranger has been in production for several years, but has been given no publicity until comparatively recently, when production facilities were greatly expanded. Units are now being manufactured in three different speed ranges of 3 to 1, 6 to 1, and 9 to 1, and in sizes up to 3 hp.; larger sizes are being developed. The Speedranger is expected to find numerous applications in the textile industry.

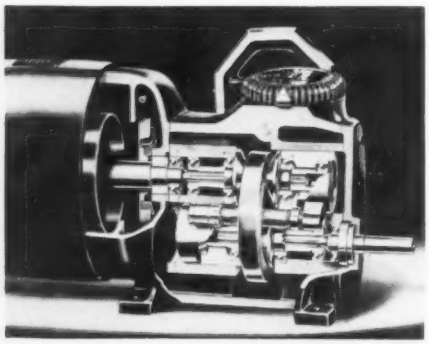


Fig. 1. Cutaway view of Speedranger; cones and ring are in low-speed position. (Masters Electric.)

The construction of the Speedranger is illustrated in Fig. 1. Essentially, variable-speed drive consists of a steel ring which runs over two driving and two driven steel cones. By varying the position of the ring on these cones, as shown in Fig. 2, the speed is varied at the output shaft. The output speed can be increased or decreased instantly while the unit is at rest or in motion, by means of a handwheel, a manual remote-control unit, or an automatic control device. At any setting the speed is said to remain practically constant.

When the Speedranger is operating at no load, very little torque is transmitted by the ring and very little contact pressure is required to provide traction between the ring and the cones. When a load is applied to the output shaft, the ring wedges into the angle of the cones. This increases the contact pressure between cones and ring in direct proportion to the load applied, thus insuring positive metallic traction (with no creeping) at all load conditions within the rated capacity of the unit. The no-load position of the ring is shown by the solid lines in Fig. 3; heavy load is shown by dotted lines.

Other mechanical features of the unit include oversize ball bearings throughout, designed to meet the thrust and radial load conditions under which they operate; automatic equalizer which equalizes any change in the setting of the parts with relation to one another; oil bath system of lubrication with metal oil seals; and speed indicator.

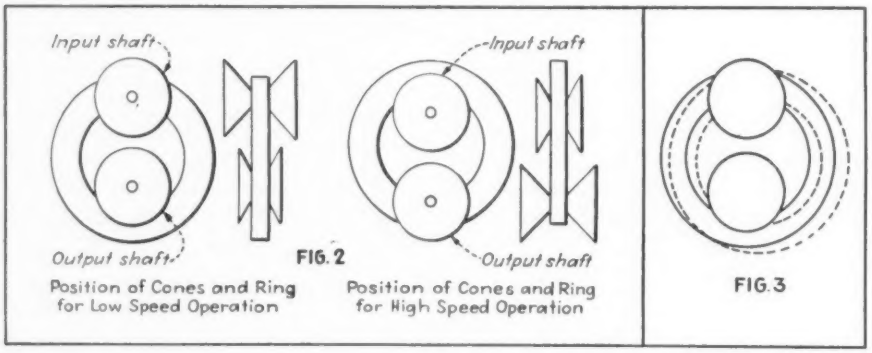
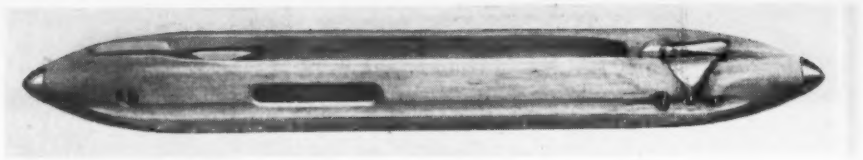

Input shaft
Output shaft
Position of Cones and Ring for Low Speed Operation
Input shaft
Output shaft
Position of Cones and Ring for High Speed Operation

FIG. 2

Fig. 2. Positions of cones and rings for high- and low-speed operation. Latter shown at the left; former at the right. Controls vary the positions between these two extremes.

FIG. 3

Fig. 3. Position of ring, no load (solid), heavy load (dotted).



Impregnated persimmon shuttle (Watson-Williams)

Persimmon Shuttles

Impregnated or fiber covered persimmon shuttles are being manufactured by Watson-Williams Mfg. Co., Worcester, Mass., to replace those formerly made of dogwood. All persimmon stock is selected to specifications and thoroughly seasoned. When fiber covering is desired it is applied in the same manner as on dogwood shuttles. An impregnating process is given to some shuttles to toughen the wood and obtain increased shuttle life.

Honor Roll Plaque

An improved honor roll plaque embodying a number of new features has been developed by M. M. Gottlieb Associates, Inc., Allentown, Pa., for those firms wishing to honor their employees in service with the armed forces of the nation. The plaque is made of a hand-rubbed walnut panel, upon which are mounted thick glass plates which are decorated in gold, red, and blue. The special composition name plates are gold imprinted and are held in place under the glass plates. Names can be inserted merely by sliding the new plate into position. The individual name plates used in the plaque are held in place without nails or screws and therefore can be re-arranged at any time. Thus, if alphabetical arrangement of the names is desired it can easily be maintained.

A printed card is furnished for presentation to each individual whose name appears upon the honor roll plaque. This announcement card is, in itself, decorative and is imprinted with the name of the firm and also the name of the individual to whom it is presented. It can be framed or mounted to make a lasting memento.

Useful Accessories for Textile Mills

Fluorescent lighting units redesigned to meet the new government specifications which permit a minimum steel content in fluorescent lighting fixtures, have been announced by Mitchell Manufacturing Co., 2525 N. Clybourn Ave., Chicago. The units, it is stated, are flexible and economical to install and

maintain and retain the good lighting features of those units produced before the government regulations. Individual or continuous row lighting units may be obtained for surface or suspension mounting.

An industrial thermometer of one-piece design has been announced by Taylor Instruments Companies, Rochester, N. Y. The instrument, as constructed, uses a minimum amount of bronze and is available in many combinations of straight and angle stems with threaded or union connections and in many standard temperature ranges, varying from −40° F. to 750° F. Scale lengths are obtainable in ranges from 7 to 9 in.

Industrial rubber covered rolls made with Ameripol synthetic rubber, are announced by The B. F. Goodrich Company. The rolls made with this synthetic rubber are restricted to war orders with the highest ratings.

The company also announces that it is prepared to furnish rolls covered with another type of synthetic rubber for those orders which cannot qualify for Ameripol. These rolls are made in a wide range of hardness, from 80 durometer to a very soft compound.

Industrial fluorescent lighting fixtures may be spaced as great as 6 in. apart using a Flexi-Coupler device, developed by Martin-Gibson Co., 999 Harper Ave., Detroit. This device makes it possible to retain all features of a continuous-run installation and yet saves on the number of fixtures installed. For example, it is possible to place nine 100-watt fixtures in a 50-foot run instead of ten.

An all-leather V-belt consisting of side walls of full grain leather firmly cemented on a leather core is being offered by Chas. A. Schieren Co., 30 Ferry St., New York. These belts are obtainable on rolls and may be made endless by cementing. Simple tools for cementing and joining the belts are supplied by the company. It is stated that the construction of this type of V-belt prevents appreciable stretching even when carelessness or accident has permitted them to become oil soaked.

Streamlined fluorescent lighting fixtures meeting the latest critical material weight requirements of the War Production Board have been announced by Sylvania Electric Products Co., Fluorescent Fixture Division, Ipswich, Mass. These flexible units are designed so that they may be used either as individual mountings or group mountings and come with two 40-watt, three 40-watt and another model with two 100-watt fluorescent lamps.

Mill Maintenance Section

Cementing Woven Cotton Belting

Data on a new method for cementing woven belting have been released recently by Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. This method was devised by Max Kholas, Westinghouse beltman, who was granted a patent on the process. Woven cotton belting cemented by this process is being used extensively by Westinghouse on several types of equipment. Belt sizes range from 3/8 to 84 in. wide; from 2 to 8 ply; and in various lengths.

The method of cementing the belting is quite simple and is done without special tools or expensive equipment. The actual splicing can be done right at the machine where the belt is to be used. This permits the use of cemented belting having the advantages of endless belts on machinery and equipment so constructed that endless belts cannot ordinarily be used.

The actual splicing procedure is somewhat similar to the method used in splicing leather and rubber belts. The belt is first cut to length, allowing for the splice and deducting for stretch. The ends are tapered to a feather edge with each ply being step cut. Next the ends are prime coated with a solvent and cement solution. After drying 5 to 15 min., a sheet of cement which has been immersed in solvent is placed between the ends of the splice and the belt is then securely clamped and allowed to dry. Drying time varies with the size of belt and room temperatures.

Westinghouse is offering the method on a license-free basis to companies engaged in war work and will give full information to companies so licensed on the process, type of cement used, and specifications for a special inner-bound weave belting which is needed for power transmission purposes.

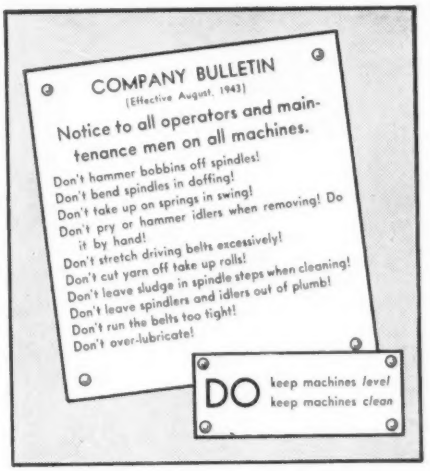
How to Maintain Oil Circuit Breakers

Costly failures and delays in operation are prevented if the starting breaker functions properly when an emergency arises. It is necessary that the breaker receive periodical inspection and maintenance if failures are to be prevented. When properly applied, oil circuit breakers protect the motor from overloads, short-circuits and guard against the sudden application of full voltage to the motor after it has come to rest.

N. P. Wilson, Engineering and Service Dept., Westinghouse Electric & Mfg. Co., has listed ten points to check for proper maintenance. However, the frequency of inspection and maintenance depends upon the severity of the duty which the breaker must perform and the condition of operation. Usually, a light monthly inspection with a thorough inspection and maintenance semiannually should be satisfactory.

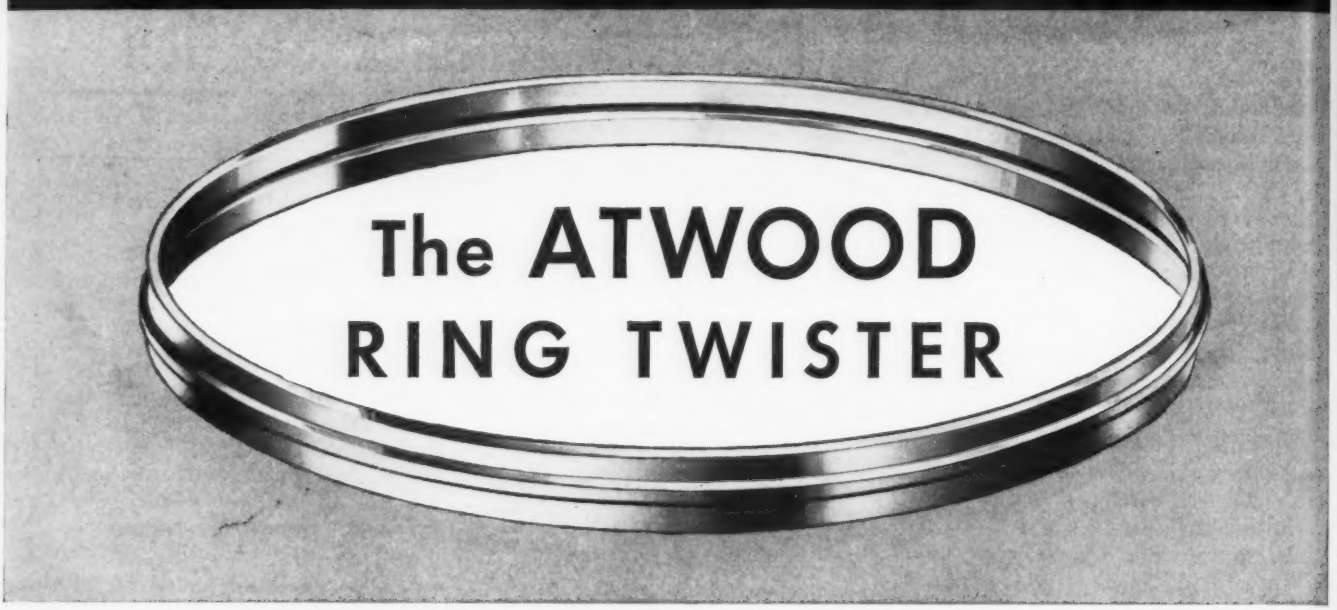
1. Before making any adjustment to an oil circuit breaker, make sure that all lines leading to it are electrically dead.
2. Be sure the breaker frame is grounded.
3. Do not operate the breaker excessively by the electrical operating mechanism when the oil tank is removed.
4. Examine all contacts frequently, especially after severe short circuits, to see that contacts are properly aligned. Dress or replace contacts that are burned.
5. After making adjustments, test the breaker by hand to make sure that it operates smoothly and correctly.
6. Inspect the oil regularly and after

(*Continued on page* 102)


COMPANY BULLETIN
(Effective August, 1943)
Notice to all operators and maintenance men on all machines.
Don't hammer bobbins off spindles!
Don't bend spindles in doffing!
Don't take up on springs in swing!
Don't pry or hammer idlers when removing! Do it by hand!
Don't stretch driving belts excessively!
Don't cut yarn off take up rolls!
Don't leave sludge in spindle steps when cleaning!
Don't leave spindlers and idlers out of plumb!
Don't run the belts too tight!
Don't over-lubricate!
DO
keep machines level
keep machines clean

Instructions to all spinning machine maintenance men may be prepared and posted on the bulletin board, as suggested in a recent issue of *Atwood Twists*, published by Atwood Machine Co.

Important News of a Ring Twister



The Atwood Ring Twister, Model 10 (and the even more heavily constructed Model 11) represent a natural and logical development. Atwood Ring Twisters have always had virtually complete responsibility for the twisting of the finest and most expensive yarns calling for extreme accuracy of twist and avoidance of waste in process. The Atwood Model 10 and Model 11 Ring Twisters now bring you all of the well established Atwood advantages for the larger packages and heavier yarns.

Here are some of them:

1. **Individual Control Of Each Spindle And Feed Roll Unit** — greatly increasing the ease and efficiency with which the operator can do her work.

2. **Waste Of Yarn Minimized** — the Atwood stop motion halts the spindle and feed rolls instantly whenever a *single end* breaks in the plying operation. Its action is sensitive and sure. Knots can be tied in single ends. No more dirty yarn.

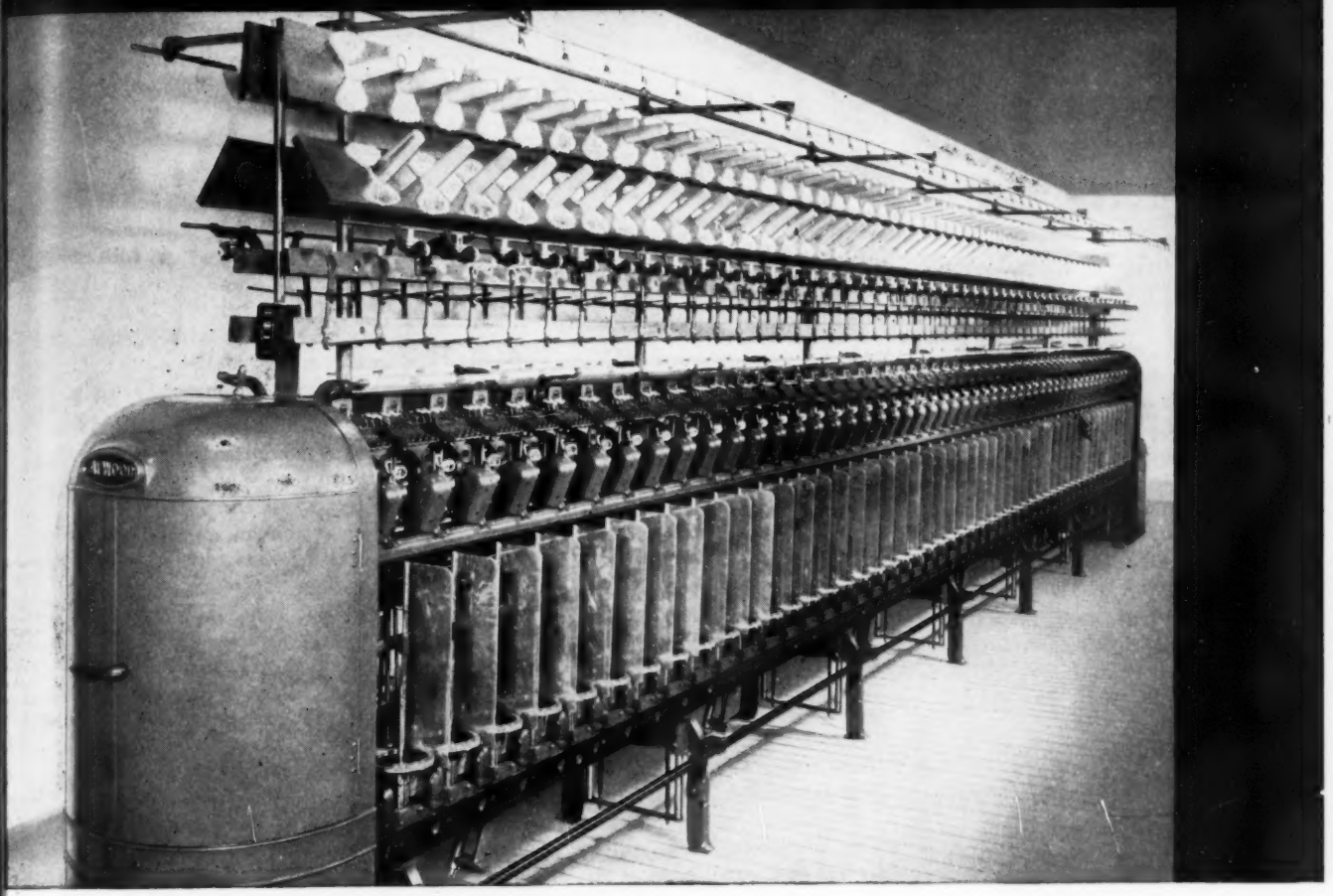
3. **Operation Is Really Convenient** — every part of the Atwood Ring Twister is easy to get at. Creeling is accomplished without reaching or straining. Threading up is done easily and quickly on the individual feed rolls for each spindle.

4. **Single Drive — Uniform Spindle Speed** — The Atwood Ring Twister employs a *single belt* drive delivering equal driving power to each and every spindle. There is no opportunity for drive variation throughout the long life of the endless, lapless belt. Constant spindle speed for the entire machine is always assured. When one spindle is stopped, no other spindle is affected.

AWARDED
ATWOOD
(with service star)

THE ATWOOD MACHINE COMPANY

for RAYON, SPUN RAYON, WORSTED OR COTTON YARNS



5. **Ends Totally Enclosed But Readily Accessible** — Gearing and builder motion are neatly protected against dirt and damage. Big doors assure complete convenience of lubrication and inspection. The same goes for the motor drive at the other end.

6. **Many Construction "Plus" Features** — The Atwood Ring Twister is unusually compact, takes minimum floor space. Traversing thread boards are standard equipment. So are full-length separators. Lifter rods are an integrally mounted part of the rigid midstand; no extra brackets are employed. The entire machine is built to "take it".

7. **Extreme Flexibility—Fits Your Requirements Like A Glove**—Traverse up to 9½ inches. Any ring size up to 5¾ inches. Any desired spindle spacing. Your choice of a variety of feed roll types. Any type of creel — for cakes, cones, bobbins or tubes.

Spindle speed is limited only by the ceiling on the ring twisting principle. Change or reversal of twist is accomplished in a jiffy. Builder Motion provides for virtually any type of take-up package.

NOW is a good time to become fully informed as to the operating and economic advantages of the ATWOOD Ring Twister for *your* yarns. We are prepared to discuss them with you. Just say the word.

STONINGTON · CONNECTICUT · U·S·A·

severe short-circuits. If it shows signs of moisture, carbonization or dirt, filter and retest it before replacing it in service. See that the oil level in the tanks is maintained at proper height.

7. Remove all oil and thoroughly clean the tanks, tank liners, lift rods, and terminal bushings at least once a year.

8. Thoroughly inspect all bolts and nuts; tighten if necessary. Inspect all pins, links and bearings for excessive wear. Check all cotter pins.

9. Dielectric tests of the oil should be made every three months to show if it is reasonably good for circuit breaker work. Samples should not be taken until the oil has remained undisturbed for at last four hours. If testing for indication of water, take the sample from the bottom of the tank. For indication of carbon and after a heavy short-circuit, take the sample from the surface of the oil.

10. Arrange for regular inspection to see that the circuit breaker is in adjustment, the oil of good quality, and the complete breaker functions as required.

Steam Trap Maintenance

Don't order new buckets when your old trap buckets can be reconditioned, is the advice offered in a recent issue of *Armstrong Trap Magazine*, published by Armstrong Machine Works. Seldom, if ever, does a trap bucket need replacing, but if trouble is encountered it is usually with the bucket hook. These may be replaced.

If the hook is riveted to the bucket, it may be removed, as shown in Fig. 1, by grinding off the old rivet heads and riveting the new hook in position. Another kind of trap has the hook welded to the bucket cap. Here it is necessary to remove the hook by cutting it off, as shown in Fig. 2, at the point where it curves up from the bucket cap and attaching the new hook by riveting it on top of the old hook.

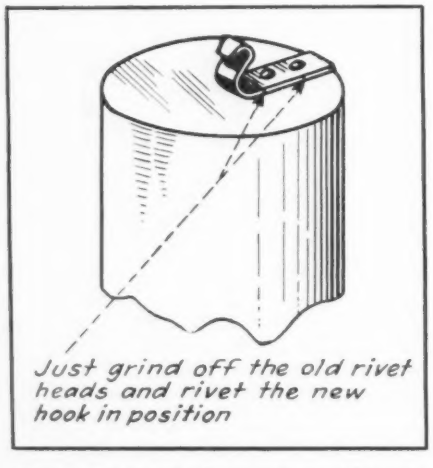


Fig. 1. Method of removing old hook.

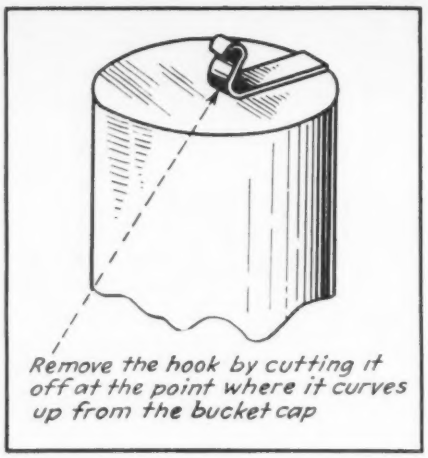


Fig. 2. Removing a welded hook.

Inspect Your Electric Motors

Inspection and servicing of motors should be systematic, especially under present wartime conditions, according to an article contained in Motor Fitness Manual, issued by General Electric Co.

Frequency of inspection and the degree of thoroughness will be governed by (1) the importance of the motors in the production scheme (if the motor fails, will production be slowed seriously?), (2) percentage of day the motor operates, (3) nature of service, (4) environment.

An inspection schedule must, therefore, be elastic and adapted to the needs of each plant. The following schedule, covering both a-c and d-c motors, is based on average conditions insofar as duty and dirt are concerned:

Every week

1. Examine commutator and brushes.
2. Check oil level in bearings.
3. See that oil rings turn with shaft.
4. See that shaft is free of oil and grease from bearings.
5. Examine starter, switch, fuses, etc.
6. Start motor and see that it is brought up to speed in normal time.

Every six months

1. Clean motor thoroughly, blowing out dirt from windings and wipe commutator and brushes.
2. Inspect commutator clamping ring.
3. Check brushes and renew any that are more than half worn.
4. Examine brush holders and clean them if dirty. Make sure that brushes ride free in the holders.

5 and 6. Check brush pressure and position.

7. Drain, wash out, and renew oil in sleeve bearings.
8. Check grease in bearings.
9. Check operating speed or speeds.
10. See that end play of shaft is normal.
11. Inspect and tighten connections on motor and control.

New Dyes and Chemicals

Organic Alkyl Peroxide

Announcement is made by Union Bay State Co., 50 Harvard St., Cambridge, Mass., of a new organic alkyl peroxide which is believed to be suitable for use as an oxidizing and bleaching agent in processing cotton, wool, and other textiles. Chemically, the new product is known as t-butyl-hydroperoxide. It is supplied in the form of a stable liquid with an active oxygen content of about 10%. It is soluble in many common organic solvents and is slightly soluble in water.

White Pigment

Development of a new pigment which is expected to find several applications in textile processing has been announced recently by Columbia Chemical Div., Pittsburg Plate Glass Co., Grant Bldg., Pittsburgh, Pa. This new pigment, known as Silene, is a white, finely divided, precipitated, hydrated calcium silicate. Silene is composed of fine particles in the form of small, friable agglomerates that are readily dispersed in various vehicles such as are used in coating textiles. It can be redispersed in water.

Mildewproofing Process

Announcement has been made recently that Aqua-Sec Corp., 1450 Broadway, New York, and General Dyestuff Corp., 435 Hudson St., New York, have been appointed sole selling agents for the Puratized process for rendering textiles mold and mildew

GIVE US THE TOOLS

Today—it is the tools to win the war . . .

Tomorrow—it will be the tools to win the peace.

That is how we consider our immediate job at SONOCO, and how we are planning for our bigger job of the future.

The same men and women who are now fighting and working to win the war will, in the not too distant future, all be working to win the peace.

. . . . and that poses a challenge to American Industry which we, for one, want to be ready for.

American Industry, not government, built the "Arsenal of Democracy." It will also build the peace and prosperity of the future.

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resistant. This process, which is recommended for treating materials to conform to the mildew resistance requirements of various Army, Navy and Marine Corps specifications, is a development of Gallowhur & Co., Inc., 250 East 43rd St., New York. Among advantages cited for the Puratized process are: (1) imparts a lasting mildew and mold resistant finish; (2) free of objectionable odors; (3) does not alter color of materials; (4) may be dried at high temperatures; (5) compatible with other finishes; (6) does not increase flammability; (7) does not alter hand of materials; (8) does not add toxic or irritating properties; (9) does not affect porosity; and (10) no additional plant equipment is required for application.

New Publications

Fundamentals of Human Relations for Supervisors

ELEMENTS OF SUPERVISION; by William R. Spriegel and Edward Schulz; John Wiley & Sons, Inc., New York; $2.25.

Supervisors must be thoroughly grounded in the fundamentals and principles of supervision and human relations in order to exercise group control effectively. This book gives these fundamentals along with a conference outline for supervisory groups that desire to understand and apply them to their everyday, practical problems. Material on group control, morale, absenteeism, and labor relations should be of immediate interest.

It is recognized in this book that the supervisor's job is largely one of human engineering and that he should make this knowledge of supervisory and human relations principles a part of his own personality by applying them in his own way.

Directory of Canadian Dry Goods Field

FRASER'S CANADIAN TEXTILE, APPAREL AND FUR TRADE DIRECTORY; Fraser's Trade Directories, Ltd., University Tower Bldg., Montreal, Canada; $2.00.

This 644-page volume contains classified lists of all Canadian manufacturers of textiles, apparel and furs. Another list gives Canadian agents serving mills, wholesalers and retailers; also agents in Canada for firms outside the country. A further feature is a list of trade names alphabetically arranged.

Other Publications of Interest to Textile Men

JUDGING FABRIC QUALITY. Farmers' Bulletin No. 1831, U. S. Dept. of Agriculture; Super'd't. of Documents, Washington; 5c. This bulletin attempts to cover briefly the identification of cotton, silk, wool, and rayon. Wearability, serviceability, colorfastness, shrinkage control, and special finishes of fabrics are considered from the home economics point of view in this 22-page bulletin.

ULTRA-VIOLET LIGHT AND ITS APPLICATIONS; H. C. Drake and Jack De Ment (1942); Chemical Publishing Co., Inc., 234 King St., Brooklyn, N. Y.; $3.25. Applications of ultra-violet radiation in industry, microscopy, spectroscopy, and chemistry; contains list of many important inorganic and organic substances with their test reactions.

RESINS, RUBBERS, PLASTICS; Edited by H. Mark and E. S. Porskauer; Interscience Publishers, Inc., 215 Fourth Ave., New York; $38. Abstracts in loose-leaf form of papers and articles in trade and scientific service magazines. Yearly service comprises approximately 700 pages of comprehensive abstracts.

REPORT ON OIL-ENGINE POWER COST FOR 1941; American Society of Mechanical Engineers, 29 West 39th St., New York; $1.25. Executives and engineers concerned with the problem of economic power supply for industrial plants will find authoritative and useful data on cost of operation of diesel engines in 151 plants.

PROCEDURE HANDBOOK OF ARC WELDING DESIGN AND PRACTICE, Seventh Edition; Lincoln Electric Co., Cleveland, Ohio; $1.50. Mill maintenance men will find much useful information in this welding handbook to help "keep 'em running" for the duration. Eight sections of this 1,308 page book contain such material as welding methods and equipment; technique of welding; procedures, speeds and costs; methods of testing; weldability of metals; and typical applications of arc welding in maintenance.

A TABLE OF COMMON HAZARDOUS CHEMICALS, Sixth Edition; National Fire Protection Association International, 60 Batterymarch St., Boston; 20c. Information on shipping containers and storage safeguards for flammable chemicals is covered, along with new material in this edition about oxygen breathing equipment, flammable limits and explosive range, ignition temperature, and propagation of flame and flash point. Such information is of value to mills storing flammable chemicals under wartime conditions.

News of Suppliers

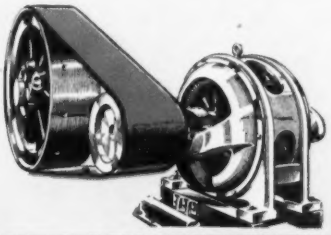
Draper Corp., Hopedale, Mass., has appointed Lloyd A. Fitzgerald, front office manager of the Hotel New Yorker, New York, to the position of Employee Relations Director. Before his entrance into the hotel field in 1930, he was employed in the production department of the Draper Corp.

Atlantic Chemical Co., Joseph Buonanno and Hugh J. Bonino, co-owners, have purchased the Centredale Mill in North Providence, R. I. The purchase included 70,000 sq. ft. of floor space, of which 50,000 sq. ft. will be put into immediate use for the manufacture of ATCO textile chemicals for war purposes.

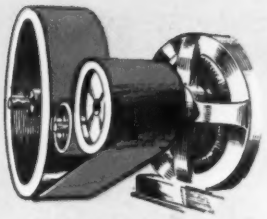
E. H. Jacobs Mfg. Co., Charlotte, N. C., has purchased the hickory timber rights of 3,400 acres of forest in North Carolina, near Marion, and the company has installed a sawmill and has begun the production of picker stick blanks.

Textile Machine Works, Reading, Pa., has issued its 15th annual "Statistical Survey" of the full-fashioned knitting industry for 1942. The total number of full-fashioned machines in the United States at the start of 1943 was 13,230 and 980 machines were scrapped in 1942. The preface notes that the facilities of Textile Machine Works are now devoted exclusively to the war

REEMAY Used for longer life on pivoted-motor-base, idler, high-speed, and open drives; small pulleys; overloads; shockloads; and short centers. Resistant to boiling water, oil, acid fumes, dry heat to 365°, alkalies, dust. Chrome Retanned. Highest tensile strength. Greater transmitting capacity. Practically free of static electricity. Specially curried. Hand processed by skilled workmen.



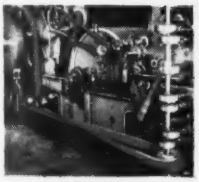
GAM-OIL Used for longer life on idler, high-speed, and open drives; small pulleys; overloads; shockloads; and short centers. Resistant to oil and heat. Tanned in Gambier by our long-time process. Greater tensile strength than Oak Tan. High transmitting capacity. Very flexible. Specially curried. Hand processed by skilled workmen.



HERE'S YOUR BELTING

FOR EVERY PROBLEM OF GREATER TEXTILE *Production*

BARNES *Combination* BELTINGS



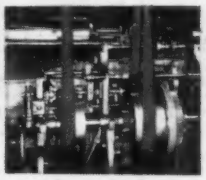
REEMAY AND BARNES OAK

For condenser drives, eccentric drives, mule drives, spinning-frame drives, Gaulois pulleys, and generators. Reemay ply goes next to pulley for high coefficient of friction; oak ply on top, for weight and firmness.

MINERAL TAN AND BARNES OAK

For drives in wetness, excessive moisture, or high humidity conditions where shipper or flange pulleys are involved. Mineral Tan ply goes next to pulley to withstand moisture without slipping or stretching.

GAM-OIL AND BARNES OAK



Specifically used on overloaded drives for immediate starts with no slipping or stretching. Gam-Oil ply, which has the highest coefficient of friction of any of our leathers, goes next to pulley. This belt is especially adaptable to picker drives which have changing loads.

All Barnes belting is put together throughout with waterproof cement and made strictly from first-quality center stock. All belting is prestretched, run in, and tested. Special treatments against mineral oils, steam, acid fumes, etc., are given on request. Write for thickness schedule and price list.

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE *Textile Leather* HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience

APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

GEORGE O'KEEFFE, who has been appointed sales manager of the Dryer Division of Proctor & Schwartz, Inc., Philadelphia, Pa. He is a graduate of Stevens Institute of Technology and was a member of the sales department of Proctor & Schwartz. He will handle all matters pertaining to sales which were formerly taken care of by the late Frederick Kershaw, president of the company.

effort and that no further issues of the "Statistical Survey" will be undertaken until the victory is won.

Arabol Mfg. Co., Brooklyn, N. Y., has appointed John J. Sokolinski, previously manager of the textile division, to be general manager of the Brooklyn plant.

General Aniline & Film, Linden, N. J., has established a research division comprising laboratory, market development and patent departments.

Crompton & Knowles Loom Works, Worcester, Mass., reports net profit for 1942 of $859,234 compared with $1,162,324 for 1941. In 1942 war contracts absorbed 95% of its capacity.

Mathieson Alkali Works, Inc., New York, has begun production of magnesium metal at the newly-erected magnesium-chlorine plant in Louisiana. The plant is owned by the Defense Plant Corp. and has a future capacity of more than 50,000,000 lb. of magnesium metal a year. The plant uses a new process developed by the Mathieson engineers which produces pure magnesium metal and liquid chlorine.

American Machine & Metals, Inc., East Moline, Ill. has appointed C. H. Wallace as sales manager of the Tolhurst Centrifugal Division. He has been with Norma-Hoffman Bearings Corp., Stamford, Conn., since 1925.

C. H. WALLACE now sales manager of Tolhurst Centrifugal Division.

Hart Products Corp., New York, has added to its technical staff, H. Martin Friedman, B. Sc., M. Sc., as chief chemist in charge of the leather chemicals division. Mr. Friedman was formerly with A. J. & J. O. Pilar, Newark, N. J., as head of chemical laboratory.

Dayton (Ohio) Rubber Mfg. Co. has appointed Kenneth K. Karnes as representative in the South Carolina

KENNETH K. KARNS now South Carolina representative of Dayton Rubber Mfg. Co.

area formerly handled by W. L. (Bill) Morgan, who has entered the service.

Victor Ring Traveler Co., has appointed Walter L. Hudson, Columbus, Ga., to take charge of the territory which includes Alabama, Georgia, Arkansas, Oklahoma, Louisiana, Tennessee and Texas, succeeding the late B. F. Barnes, Jr. Mr. Hudson is also in charge of the Atlanta, Ga., stockroom.

Cuprinol, Inc., Boston, Mass., has appointed Stein, Hall & Co., New York, as exclusive sales agents in the textile field for the distribution of its mildewproofing and other preservative agents.

Amalgamated Chemical Corp., Philadelphia, has taken over the plant formerly the No. 2 mill of Ontario Dyeing Co. at Rorer and Ontario Sts. and is remodeling for expanded production of its finishing materials including Fen-Aseptic, Fen Anti-Mildew and Fen Water-Repellent. Robert A. Bruce, vice-president and treasurer, represents the company in the South with headquarters at Greensboro, N. C.; C. H. Crane is representative in Eastern Pennsylvania, New York and New England; G. C. Harkins is representative in Southern Pennsylvania, Delaware, Maryland and Virginia. Production is going 75% into the war effort.

Kali Chemical Co. has purchased the four-story industrial building at 425-47 Moyer Street, Philadelphia, and the adjoining lot, for the manufacture of textile chemicals.

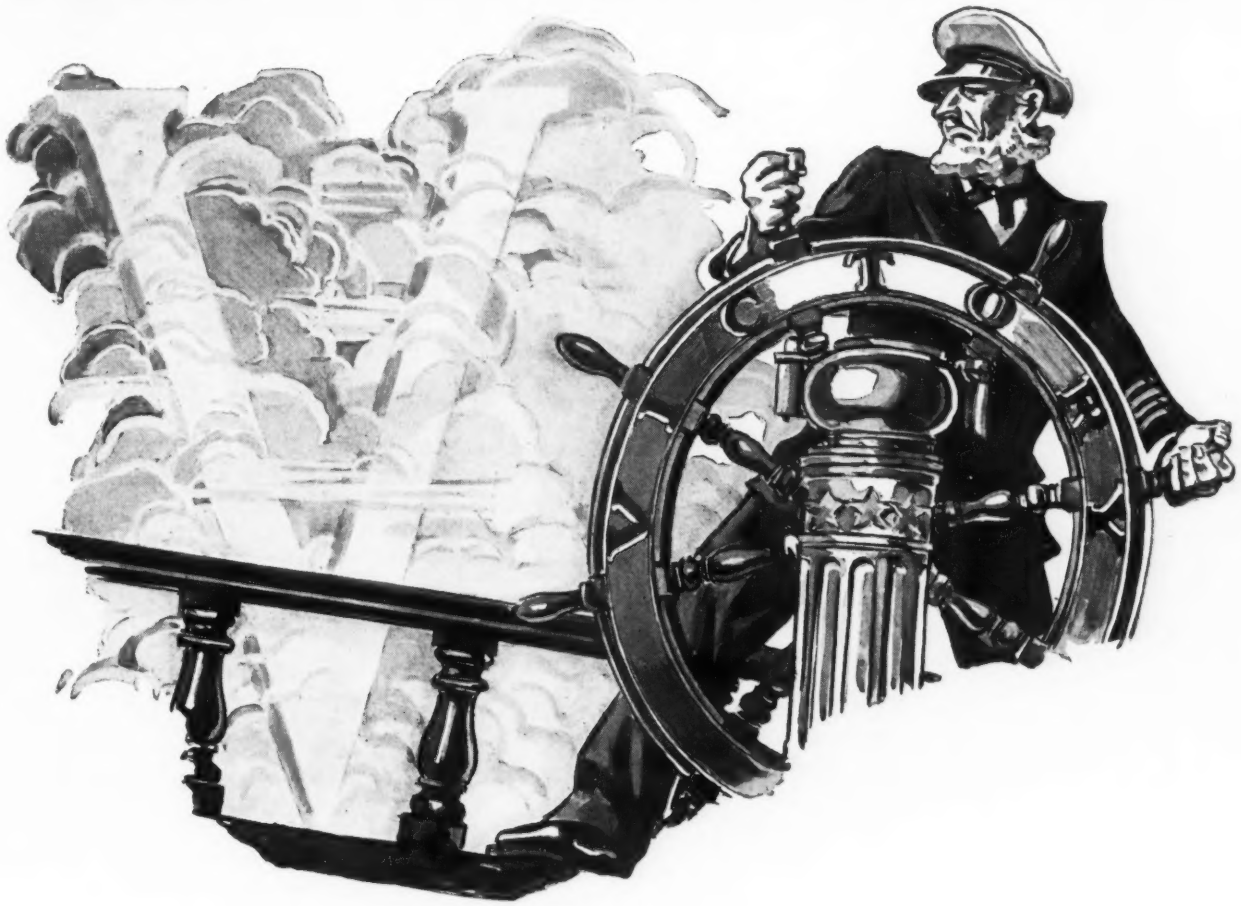
C. Walter Seidel, Chicago, has become Midwest representative for Cheney Bros. on their various yarns, in addition to his other accounts.

Veeder-Root, Inc., Hartford, Conn.—Graham H. Anthony, president of this company has been elected a trustee of the New York Trust Co.

Freeland Spool & Bobbin Corp., Hazleton, Pa., has appointed William Rosendale to take charge of its techni-

SCOTT & WILLIAMS DISPLAY—Travelers in Boston's South Station during the two weeks of May 17 to 31 saw a display prepared by Scott & Williams, Inc., shown above, which filled a large three-paneled window in the station. It consisted of enlarged photographic cut-outs of the Komet links-and-links and no-seam Nylon machines, an assortment of Komet links-and-links hosiery—infant's, men's slack and half-hose, women's anklets and half-socks, knee-socks and full-length hose—enclosed in a huge roccoco picture frame. No-seam Nylon stockings were exhibited on transparent Lucite hosiery forms.

Chart Your Course For Victory



THE textile industry is charting its course for Victory. Brilliant achievements of production of goods essential for war. Conservation of time, manpower and materials. Sacrificial buying of more and more War Bonds. All these things are speeding the day of Peace.

But even now in confident anticipation of war's end, you must chart your course for another kind of victory. Victory for your products in the unceasing battle of competition again to be established. Amazing new uses for textiles, new products conceived by the necessities of war will require new merchandising technique, new packaging, new marking for protective and informative identification.

Kaumagraph Identification Products have been fully proved in the grueling test tube of war. New products, new methods have been developed by Kaumagraph research. While they are available now for your war products, it is none too soon to consider them for your post-war products.

Why not send for a Kaumagraph Identification Man now? He can help chart your course.

Identification Headquarters since 1902

KAUMAGRAPH
Wilmington, Delaware

Dry Transfers
Prestomarks
Embossed Seals
Lithographed packaging

New York Office, 16-22 E. 34th St. · · Representatives in Principal Textile Centers of the World

FRANK PERRY NEMEC, who has been named manager of purchasing division of General Electric Lamp Department at Nela Park, Cleveland. This post was left vacant recently because of the death of Fred P. Harris. Mr. Nemec joined GE in 1922.

cal service division. He has been associated with the Duplan Corp. as assistant manager for the last five years.

A. B. Carter, Inc., Gastonia, N. C., has appointed W. S. Johnstone as member of the sales force for the Boyce-weavers' knotters and travelers of all kinds. He will cover South Carolina and Augusta, Ga. He formerly represented the National Ring Traveler Co. in North Carolina.

Quaker Chemical Products Corp., Conshohocken, Pa., held a War Show on June 9 to acquaint the personnel with the importance of their work as a part of the national war effort, and to create interest and pride in the combatant equipment which they, in conjunction with millions throughout the nation, are building.

Becco Sales Corp., Buffalo, N. Y., textile bleaching chemicals, has appointed D. Stewart Quern, of Charlotte, N. C., as southern manager. Mr. Quern has been with Becco for the last 15 years. District offices and warehouses are maintained at 1021 West Palmer, Charlotte.

A. C. Lawrence Leather Co., Winchester (N. H.) Division, received the Army-Navy "E" Award last month.

Atwood Machine Co., Stonington, Conn., has received a star for its "E" pennant, indicating renewal of this award for an additional six months.

Carrier Corp., Syracuse, N. Y., has appointed T. M. Cunningham as general manager of construction and service. G. D. Harbin has been designated regional construction manager of Carrier's Central Region to fill the vacancy created by the transfer of Mr. Cunningham.

Commercial Factors Corp.—Eugene G. Lynch, assistant vice-president and New England representative of Commercial Factors Corp., New York, N. Y., has removed his offices from 77 Franklin St. to 80 Federal St., Boston.

Textile Service, Inc., has been formed by Joseph A. Bryant, Jr., with headquarters in Providence, R. I., for the manufacture and sale of specialties for the rayon, worsted, woolen, dyeing, finishing, sizing and printing trades. He was formerly in the Boston office of Arnold, Hoffman & Co.

General Electric Co., Nela Park, Cleveland, Ohio, reports that more than 150 lighting counselors attended the spring Wartime Lighting Course.

Bemis Bag Co., Talladega, Ala., is increasing production of multi-wall bags by relocating at Mobile existing equipment to produce sewn and pasted, valve and open-mouth, multi-wall paper bags. The Mobile plant will serve all the southern territory.

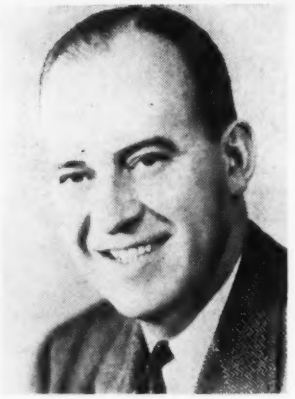
McCann-Erickson, Inc., New York, has added Hugh D. Lavery to its New York office staff. For the last seven years he has been with E. I. du Pont de Nemours & Co., as advertising manager of a number of departments and subsidiary companies, and later as merchandise manager of the Organic Chemicals Department. He planned both the merchandising of DuPont "Zelan" and the marketing of DuPont "Aridex".

Raybestos-Manhattan Inc., Passaic, N. J., brought their message before stockholders at the annual meeting this year rather than sending it to them by mail. Sumner Simpson, president, wrote each of the stockholders, urging him to attend the meeting and offering luncheon to all as a special inducement. About 250 stockholders gathered at the Hotel Biltmore in New York on April 6. On display around the room were exhibits of the war products being manufactured by the four operating divisions.

Lukens Steel Co., Coatesville, Pa., has appointed Robert G. Bloom as controller, succeeding William J. Bassett, retired.

Ridge Tool Co., Elyria, Ohio, has recently moved from its original factory site at North Ridgeville into completely remodeled and modernized plant and offices in the city of Elyria.

United States Steel Supply Co., Chicago, Ill., a United States Steel Corp. subsidiary, has purchased the physical assets of Moise Steel Co., Milwaukee, Wis. The supply company will continue the steel warehouse business conducted formerly by Moise Steel Co. in Milwaukee.



DONALD K. BALLMAN, who has been made head of Dow Chemical Co's recently-formed Service & Development Division. The division will be concerned exclusively with development of new chemical products for use both now and after the war.

Magnetrol, Inc., a division of Fred H. Schaub Engineering Co., Inc., Chicago, has appointed E. J. Snetsinger as general manager. This new division will assume complete control of the manufacture and sale of Magnetrol automatic liquid level control units.

"Blue-Printing the World of Tomorrow"

Under the above title, United States Testing Co., Hoboken, N. J., has prepared a folder outlining the scope and purpose of Planning Boards, which it has established to help industry meet technological, economic, and human (consumer) problems of the world of tomorrow. These boards are composed of experts, technicians, and engineers, as well as a consumer representative. Industries in which boards have been established include textiles, engineering, leather, chemicals, plastics, foodstuffs, etc.

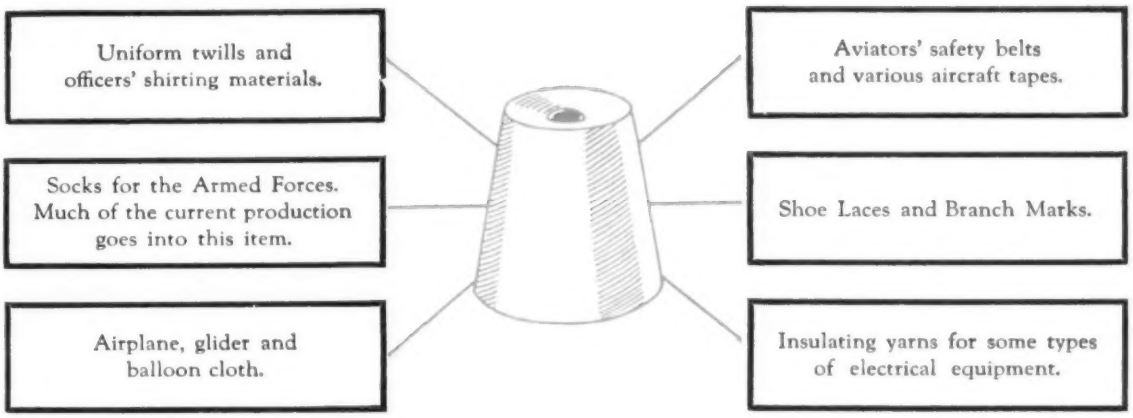
Application Procedure for Rationed Oils Outlined

All industries, large and small, which use crude or rationed cottonseed, peanut, soybean and corn oils in the manufacture of inedible products are urged by the War Food Administration to place their orders with suppliers by the 5th of the month preceding delivery.

This will give suppliers (producers and refiners) ample time to apply for allocation to meet their requirements, and will contribute largely to the smooth operation of the entire fats and oils distributing program. Emergency cases may be handled through interim allocations, but delays can be prevented if these are kept to a minimum.

Mercerized Yarns in WARTIME

MERCERIZED cotton yarns must have unsurpassed qualities for military uses, to be filling such important War assignments. Here are the major military uses—☆


Uniform twills and officers' shirting materials.
Socks for the Armed Forces. Much of the current production goes into this item.
Airplane, glider and balloon cloth.
Aviators' safety belts and various aircraft tapes.
Shoe Laces and Branch Marks.
Insulating yarns for some types of electrical equipment.

☆ These uses account for a large percentage of the record breaking production of mercerized yarns.

Dixie Durene
A PRODUCT OF CONTROLLED MANUFACTURE

is taking its place in supplying this vital Wartime production. Very little is available for civilian uses,—until after the War. Then we will be happy to fill the demands again in what promises to be a bountiful peacetime economy for all Americans.

10% OF DIXIE'S PAYROLL IS INVESTED IN WAR BONDS

Dixie MERCERIZING COMPANY

CHATTANOOGA TENNESSEE

AMERICAN COTTON MADE IN U.S.A.

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Accessories and services which contribute to better production and overall plant efficiency in woolen mills are mentioned in the March-April-May issue of *Davis & Furber News*, published by Davis & Furber Machine Co. Among the accessories mentioned are a warp compressor, automatic oil or emulsion sprayer for raw stock, card clothing tension machine, waste-end conveyor and a high speed roller bearing doffer comb.

Automatic floor to floor transfer of warp beams and slasher beams by means of the gravity type beam carrier and electric hoist operating on a monorail, is covered in a well-illustrated article appearing in the May issue of *The Swirling Column*, published by American MonoRail Co.

Saving 2 cents a pound, and at the same time producing a high quality yarn, is one of the items discussed in Shop Talk, a department appearing in the June issue of *The Howard Way*, published by Howard Bros. Mfg. Co.

"Blind Workmen Steel-strap Army Textile Products," is the title of an item appearing in Issue No. 12 of the *Acme Process News*, just published by Acme Steel Co. All textile men should be very much interested in reviewing this item as it offers possibilities for their own shipping room.

"Dividends From Your Power Plant," is the title of a 48-page booklet prepared for executives and mill managers by Preferred Utilities Co., Inc. This booklet discusses such subjects as the dollars and cents importance of boiler efficiency, the relation between steam costs and profits, natural versus mechanical draft, carbon dioxide and carbon monoxide, excess air, and factors that govern labor costs in the boiler room. Many examples, tables and sketches are contained in each of the topics discussed.

Textile equipment used in woolen mills, felt mills, batting mills and bagging mills, which is manufactured by Proctor & Schwartz, Inc., is described in a general catalog issued by this company. This 30-page catalog illustrates each piece of equipment and describes its uses and advantages.

Two catalog sections are available from B. F. Goodrich Co. The first section deals with sheet Koroseal linings for tanks made of welded steel, wood or concrete. Tanks lined with Koroseal are resistant to many strong corrosives and to inorganic salts and alkalis. The second section discusses properties of Ameripol D, an oil and heat resisting synthetic rubber. Resistance to various substances which are the enemies of natural rubber, hardness, tensile strength, elongation, weight, color, odor and taste, etc., are listed.

Fire extinguisher tables prepared in the form of charts have been issued by American LaFrance Foamite Corp. setting forth the various types of extinguishers, chemical solutions used, anti-freezing properties, vaporizing liquids and information concerning capacity and handling of these extinguishers of both the ordinary hand-type and the wheel-engine type.

Vertical and horizontal discharge types heaters are described in two specification sheets offered by Carrier Corp. The vertical discharge unit heater will heat from heights up to approximately 45 ft.

"Engineering Handbook Hy-ENG.-1," has been issued by Hyatt Bearings Div., General Motors Corp., and is available only to those mill executives writing on mill letterhead and stating their position. This 96-page handbook contains mathematical, trigonometric and engineering formulas and tables which are of assistance to the engineer from the standpoint of bearing design. Hardness conversion tables, steel analyses, essential engineering data on belt drive, spur gears, internal gears, helical gears and worm gears are given. A 10-page section is devoted to press fit bearings.

Vinylite vinyl butyral resins are described in a 6-page technical data folder issued by Plastics Division of Carbide and Carbon Chemicals Corp. Bulletin contains data on formulations, primer coating, pigments, plasticizers, finish coats, solvents, baking, calendering and cementing.

Indicating and recording controllers for temperature pressure records in industrial plants are covered in Catalog No. 1200, issued by C. J. Tagliabue Mfg. Co.

Protection of metal against corrosion is discussed in a catalog known as "The Tocol Line," offered by Protective Coatings, Inc. Various types of industrial coating are described, their uses enumerated and methods of application given.

Safety engineers in textile plants will be especially interested in a reprint entitled, "The Role of Lighting in Accident Prevention," being offered by Holophane Company, Inc. This article draws a direct connection between lighting and accidents and contains a number of valuable charts and tables applicable to industrial lighting.

Master mechanics and maintenance men in textile mills will find booklet No. B-3201 covering brazing with phos-copper, and issued by Westinghouse Electric & Mfg. Co., of help to them in their repair work. This 12-page booklet contains hints on good brazing and proper joint designs. It also points out the advantages of phos-copper brazing.

Welding and cutting operators will be interested in a 20-page pocket-size handbook being offered by International Acetylene Association. This booklet contains a list of do's and don'ts for the man who welds and much helpful information and suggestions on the care and maintenance of blowpipes, regulators, and welding and cutting accessories.

Application of infra-red drying of textiles is discussed in a folder offered by Infra-Red Division, Carbomatic Corp. Typical applications of radiant heat in the textile field are shown.

A 14-page guide for better belt maintenance, issued by DuGrip Mfg. Co., considers such items as under-dressing and over-dressing of belts, cleaning dirty belts, de-oiling belts, pulley coating, treating new leather belts, dry belts and belt troubles and their causes.

Volume One, number one of *The War Worker*, published by Stewart Warner Corp., has just been issued. This newspaper of the employees is published twice a month by the men and women of Stewart Warner, reporting the events and serving as a common meeting place. Of outstanding interest are two features to be run in each issue, one of pictures in the news and the other a chart showing the attendance record of workers on all shifts over weekly periods.

Conservation of safety equipment is discussed in a 42-page booklet offered by Mine Safety Appliances Co. This booklet contains many suggestions on the handling and upkeep of safety equipment such as protective gloves, first aid kits, respirators and many other types of safety items.

Industrial slat shades to guard against production losses and worker fatigue due to sun glare, sun heat, and draft are discussed in Bulletins No. 151 and No. 152, issued by Hough Shade Corp.

A revised list of fire protective equipment has just been announced by Factory Mutual Laboratories and includes many types of equipment manufactured under Emergency Alternate Specifications designed to conserve critical materials. This list should be in the hands of all safety engineers.

Fluorescent lighting for industry, their method of suspension and data concerning mountings and average foot-candles obtained, is covered in folder No. 31-F, offered by Bright Light Reflector Co.

FULLERGRIPT Brushes keep flat card clothing clean

This is how a set of Fullergript Card Brush Refills looks ready to operate

When brush materials are gripped in Steel—like Fullergript—you have no worries about atmospheric temperatures affecting the brush materials or holding method—no tufts to fall out from splitting blocks or cement loosening.

That's why hundreds of flat cards in mills today use Fullergript, and are constantly replacing old tufted construction as fast as possible. These pre-formed spiral all-metal-back strips are easily attached to your present wood cores by following our simple directions.

Study the photograph above. There are longer bristles at each end of brush strip to clean the ends of the flats where there is no card clothing and keep them free of oil and lint. Our Brush construction packs material into a continuous, dense strip with no gaps to permit insufficient cleaning of the flat clothing.

Cleaner Top Flats Mean Better Carding

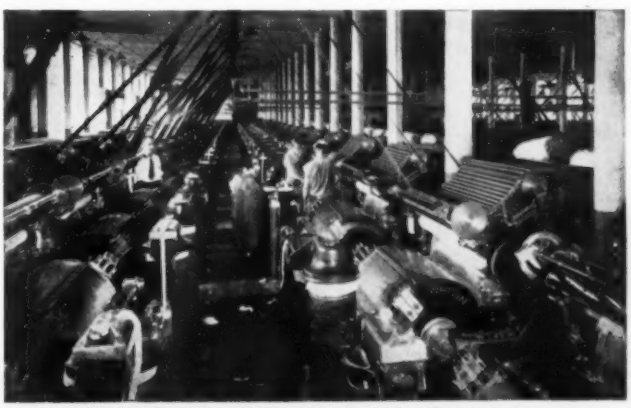
Many Carders started with trial sets of Brush Refills, and results meant building up to full installations over a period of excellent performance. These mills are not located in any one section of the country but spread over many States.

We are confident that if you will give them a trial on a few machines, you will want only Fullergript Brushes.

Here's the Installation Record of Six Mills in Six States. Names on Request.

STATE	TRIAL ORDER	MACHINES NOW EQUIPPED WITH FULLERGRIPT
Maine	6 sets	202 machines
Georgia	6 sets	114 machines
Massachusetts	2 sets	102 machines
South Carolina	2 sets	104 machines
Alabama	12 sets	139 machines
Rhode Island	6 sets	242 machines

Over 5000 Cotton Cards are in use today with Fullergript Replaceable Brush Strips. Why not investigate the economy and greater efficiency of these remarkable brushes?



(Card Room at Manville Jenckes Corporation. Full complement of our Brushes on all cards.)

The FULLER BRUSH Company

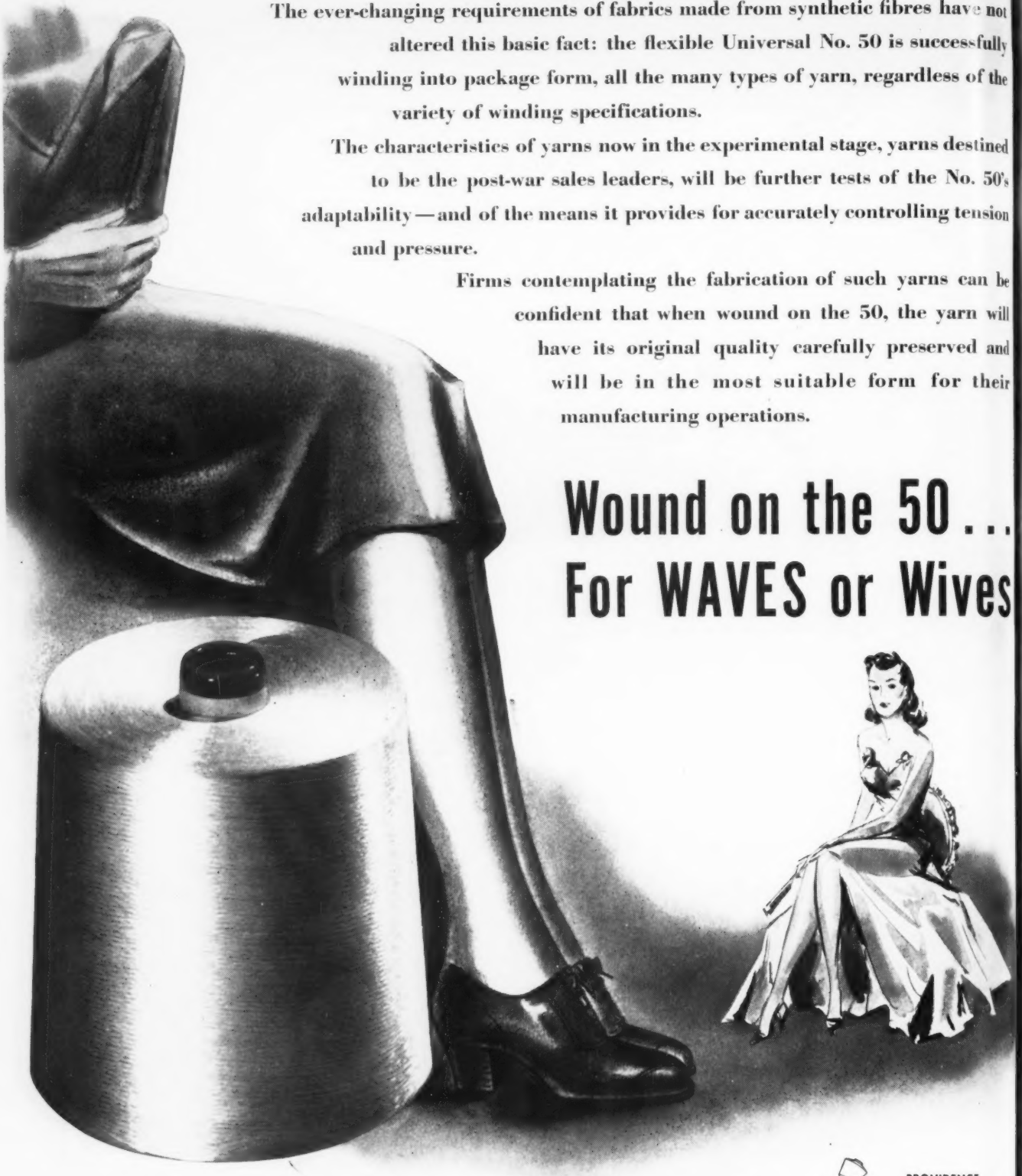
3594 MAIN ST., INDUSTRIAL DIVISION 8C, HARTFORD, CONN.

The ever-changing requirements of fabrics made from synthetic fibres have not altered this basic fact: the flexible Universal No. 50 is successfully winding into package form, all the many types of yarn, regardless of the variety of winding specifications.

The characteristics of yarns now in the experimental stage, yarns destined to be the post-war sales leaders, will be further tests of the No. 50's adaptability—and of the means it provides for accurately controlling tension and pressure.

Firms contemplating the fabrication of such yarns can be confident that when wound on the 50, the yarn will have its original quality carefully preserved and will be in the most suitable form for their manufacturing operations.

Wound on the 50... For WAVES or Wives



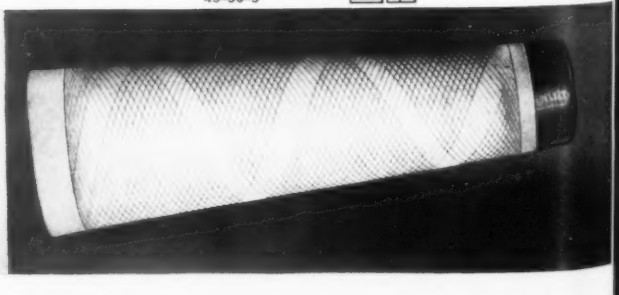
Universal Winding Company

LEESONA

43-50-3

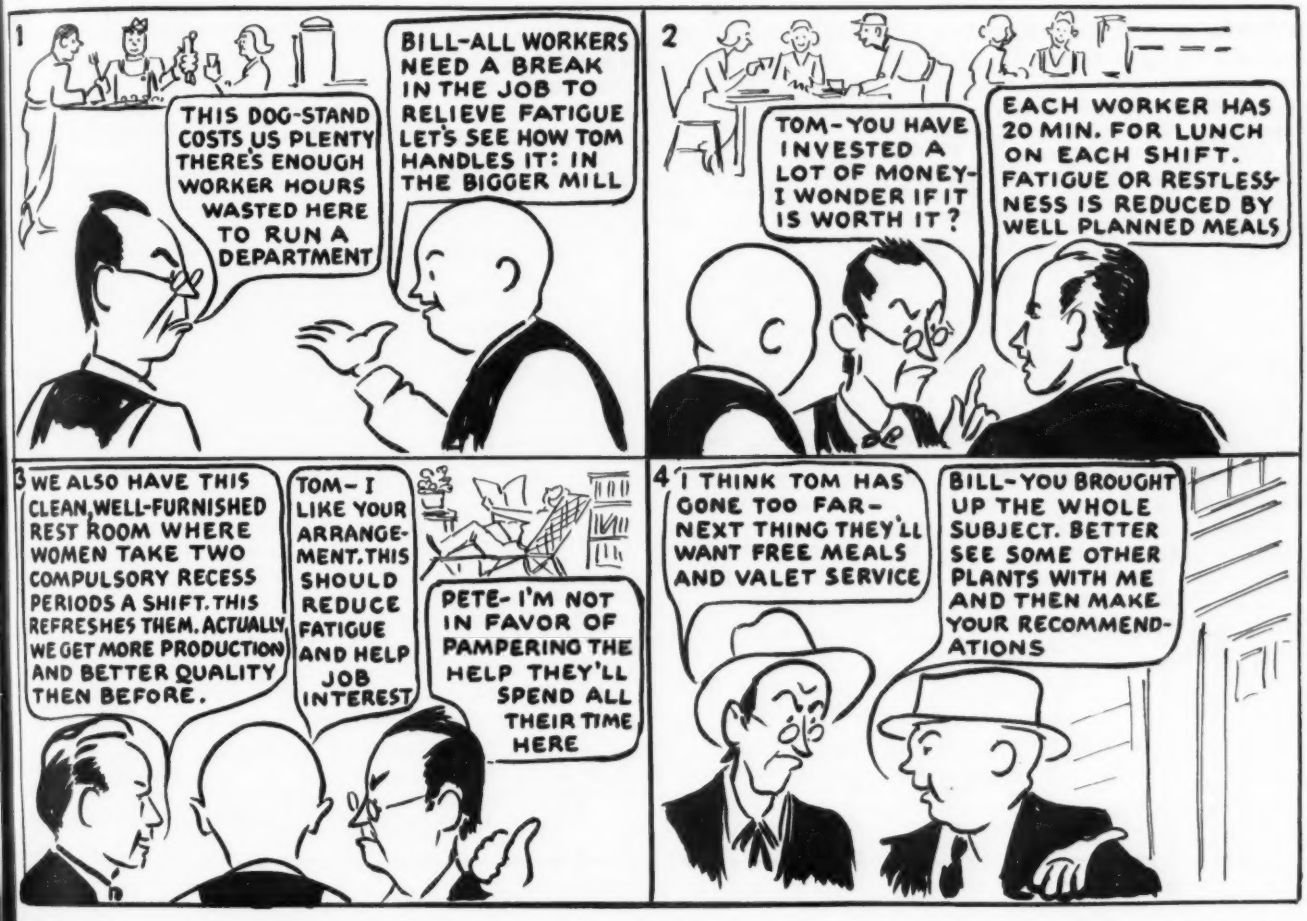
PROVIDENCE
BOSTON
PHILADELPHIA
UTICA
CHARLOTTE
ATLANTA

MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES IS PRE-CISE-WOUND ON THE FLEXIBLE 50



PETE & BILL

REDUCING WORKER FATIGUE


1
THIS DOG-STAND COSTS US PLENTY THERE'S ENOUGH WORKER HOURS WASTED HERE TO RUN A DEPARTMENT
BILL-ALL WORKERS NEED A BREAK IN THE JOB TO RELIEVE FATIGUE LET'S SEE HOW TOM HANDLES IT: IN THE BIGGER MILL
2
TOM-YOU HAVE INVESTED A LOT OF MONEY-I WONDER IF IT IS WORTH IT?
EACH WORKER HAS 20 MIN. FOR LUNCH ON EACH SHIFT. FATIGUE OR RESTLESSNESS IS REDUCED BY WELL PLANNED MEALS
3
WE ALSO HAVE THIS CLEAN, WELL-FURNISHED REST ROOM WHERE WOMEN TAKE TWO COMPULSORY RECESS PERIODS A SHIFT. THIS REFRESHES THEM. ACTUALLY, WE GET MORE PRODUCTION AND BETTER QUALITY THEN BEFORE.
TOM-I LIKE YOUR ARRANGEMENT. THIS SHOULD REDUCE FATIGUE AND HELP JOB INTEREST
PETE-I'M NOT IN FAVOR OF PAMPERING THE HELP THEY'LL SPEND ALL THEIR TIME HERE
4
I THINK TOM HAS GONE TOO FAR-NEXT THING THEY'LL WANT FREE MEALS AND VALET SERVICE
BILL-YOU BROUGHT UP THE WHOLE SUBJECT. BETTER SEE SOME OTHER PLANTS WITH ME AND THEN MAKE YOUR RECOMMENDATIONS

Do well managed cafeterias and rest areas increase worker efficiency and step up mill production?

Letters from Readers

Oilers Most Important

"Who Should Oil Machinery?"
Pete and Bill, April, 1943

Dear Pete & Bill:

Who should oil machinery and who should plant a cotton field? The two people best adapted for such jobs are an oiler and a farmer respectively—not a fixer or a lawyer.

Pete says train an oiler for the department. I suggest training a crew of oilers for the entire mill, give each oiler a certain amount of machinery in each department, and schedule the time to be spent in each place. Also, schedule the parts to be oiled daily on a weekly chart so the oilers will know what is expected of them each day, and then have a boss oiler to go with the crew to see that each man does his work.

For example, a large mill needs nine oilers, and a boss; five for general oilers, two spindle oilers, and two dopers. The boss oiler knows the different kinds of oil and which is best for a particular machine part or method of oiling, and he requires the use of the best oil available for each lubricating job.

The fixer may understand the machine, but does he understand oil? What kind of oil is best for the several different parts? Does he know lightweight oil will not keep a friction bearing on the loom cool, but that nonfluid oil will? Does a fixer know that a big bearing on cards requires two kinds of oil, cup grease and a light weight engine oil? The cup grease keeps it cool under normal conditions, but when a card becomes unlevel, the bearing becomes hot, and the cup grease does not melt fast enough. The light weight engine oil at once makes the cup grease thinner, and keeps a steady lubrication on the bearing when most needed.

Machines cost more money than anything else in the mill, so why not put an oiling crew on them, which understands the machines, and knows what is needed to keep them running—good oiling. The machines will last longer, and require less fixing.

A fixer receives more pay than the oilers, it's true, but just how long can

a machine run without oil? It takes brains to fix, all right, but it also takes brains to be a good oiler. In fact, the oiler has the most important job in the mill since the proper running of the machine depends largely on him. He knows the most obscure part is just as essential to keep the machine running as the ones that are most noticeable.

Fires can be greatly decreased by giving each oiler certain machines for which he is held responsible, and the boss will know who to call for a burned-out bearing, bobbin gear or twin gear, and don't worry about them not being oiled. Hot machinery has a way of "talking back" within a few hours of neglect. If you doubt it, ask an oiler who missed an oil hole twice in succession.

A Real Oiler (Ala.)

Learn the Joy of the Job

Dear Pete & Bill:

Did you ever know a person to achieve much of success in work he did not like?

History is full of incidents of men who have achieved in face of great discouragements. The present time is one when men are learning the hard lesson of facing discouragements unflinchingly and cheerfully. Admiral Lord Fisher, one of England's greatest sea heroes, once said: "What really is a man's life is the endurance and the adversity and the non-recognition and the humiliating slights and the fighting morning, noon and night."

Nobody ever did anything well, or got anywhere, without joy in his job, and that is as true of little jobs as of big ones. I know of many successful superintendents and overseers who started at jobs that may have seemed uninteresting, yet of which they were unashamed and unresentful; they were banking on themselves, playing a thrilling game.

There are dirty jobs, dull jobs, devastating jobs in the mills, but I think there are few of these that do not give some return outside of the pay envelope. Our United States' greatest contribution to life is that honest labor is dignified and desirable for everyone. It really must help to know that you're pulling your weight, doing your bit, and holding your place in the world—at least it must help the man whose vision hasn't been distorted. Do you agree?

Uncle Dave (N. C.)

Fire the Cronic Absentee

"Handling Absentee Workers"
Pete & Bill, May, 1943

Dear Pete & Bill:

As for me, I am strong in the opinion that absenteeism should not and ought not be tolerated in any plant, especially, plants manufacturing war material. Of course, there are exceptions to every rule. The absentee might have valid and sufficient reason for an excuse for laying off, but without this, there is only one answer, eliminate such an employe. Sure, they are doing nothing but aiding the enemy; such an employe is literally worthless to our armed forces, and to the preservation of liberty that is sure to dawn when our enemies have been crushed.

I feel that an absentee is nothing but a hindrance to the progress of the plant: a detriment to the successful conclusion of the war, and let's put him out of the plant for all time.

Edna V. Webb (Ky.)

A Set of Tools for Each Fixer

"Who Should Pay for Lost Tools?"
Pete & Bill, June, 1943

Dear Peter & Bill:

This lost tool business is a pain in the neck to both overseer and fixer. With two and three shifts using the same kit, there's no fixing of responsibility but a premium on good buck-passing. The best way out is a separate kit of hand tools for each fixer on each shift, and back they go into the fixer's locker when he goes off. That sets the responsibility, and makes each man satisfied that his tools are as good when he picks them up as they were when he left them. Less friction—more efficiency!

And let me express thanks to the artist who gives us such dramatic shots of Pete & Bill—he must have a real movie camera on the spot when these two good fellows get together.

X. Y. Z. (N. Y.)

Memories of Old Man Carelessness—*By Martha Pittenger*

No. 7. DEATH FROM THE COMPOUND

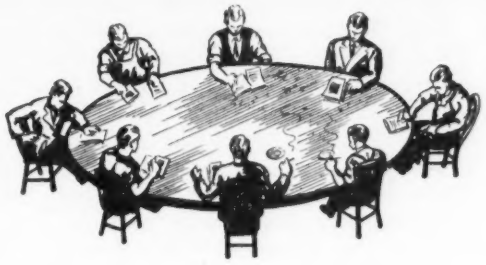
I shall now relate the death of one thoughtless oiler, whose injury was well planned by me. I watched him for days, followed him around on his job. I thought I would never catch him off guard. And then, one day, just before quitting time, I noticed he was thinking of something else beside his job—so I just hung on to him, getting prouder of myself all the time, for I could see I was having a great effect on him.

He and I were side by side when he reached the card room and started oiling the compound gear under the speeder. I had noticed in the past that he always used the lock to keep the speeder from being started up—but today, he just dropped the door, neglecting to put the safety pin in place. I was getting nervous for fear he would not get hurt, so I hovered over him even closer.

He finally got the compound oiled and then reached back to oil the twin-gear. Then the tender came along and started up the speeder. It started turning fast and before he could realize what was taking place, the teeth on the compound cut his arm deeply in several places, a bleeding cut, combined with sweat and oil. He never had much chance of getting well, for even first aid and a doctor's care couldn't stop a serious infection, which in a few days brought death.

I sorta smiled and chuckled to myself. I was the cause of one of the most successful accidents I ever had the privilege of watching.

MILL MEN'S ROUND-TABLE



With meetings of operating executives curtailed because of the war, there is a definite need of a meeting place where mill men can discuss their problems among themselves. The Mill Men's Round Table is designed to supply this need. It is open to all readers for discussion of any and all subjects relating to mill management and operation. Bring your problems to the Round Table. Give other mill men the benefit of your experience, and get their ideas in return. To encourage frank and open expression of ideas and opinions on controversial subjects, names of contributors to the Round Table will not be published, but will be held confidential, if so requested. However, source of contributions must be identified as evidence of good faith and to permit payment for items published. Address contributions to: Editor Mill Men's Round Table, TEXTILE WORLD, *330 West 42nd St., New York. Opinions expressed in this department are those of the writers and do not necessarily reflect the opinions of* TEXTILE WORLD.

Attitude on Wage-Hour Law

Do you know what is the majority opinion in the industry concerning the retention of the Wage-Hour Law after the war?

Frankly, I have been trying to make up my own mind and I want to get the viewpoints of others.

As a general proposition, I am opposed to the perpetuation of any Government controls that can be avoidable. On the other hand, I remember too well the wage collapse during the depression, leading to successive price cuts, which took away all premium on good management.

Do you think there is any way to prevent that type of unfair competition without a legal floor on wages and a legal ceiling on hours?

I would very much like to get the opinion of other manufacturers.

Executive (*R.I.*)

What Is Best Type of Filling Fork?

Many weaving superintendents have their own pet ideas about the best type of filling fork for reducing broken ends and mispicks. The side filling fork is preferred by some overseers, and the doubler fork by others having Draper looms. Crompton & Knowles users seem to be divided between the center filling fork and the side filling fork. Some men don't like the center filling fork, because it is hard to get to and adjust and rough blades can cause broken ends. Side filling forks cause mispicks on high-speed looms, and the double fork is replacing that largely on newer looms. What I would like to know is the type and width of loom, and the size of filling where each type of filling fork can perform at its best in reducing mispicks and broken ends to a minimum?

J. D. (*Ga.*)

Pre-Boarding Temperature for Acetate Hosiery

In the June issue, J.C.C. asked about the proper temperatures for pre-boarding and dyeing acetate rayon hosiery. We have been dyeing our acetate rayon hosiery at 180° F. and have obtained excellent results. We have never made any experimental tests regarding the results that are obtained by dyeing at the 200° F., for it was always our understanding that acetate rayon should not be dyed at a temperature of over 180° F.

The highest temperature that should be used in pre-boarding acetate rayon hosiery has been found to be 208° F. It will be observed, if tests are made, that the higher the temperature of the pre-boarding, the smoother the appearance, but if the temperature exceeds 208° F. the hosiery will be tendered.

We suggest pre-boarding at 205° F. for 2½ to 3 min.

We leave our acetate rayon stockings on the forms in the pre-boarding machine after the pre-boarding period with the door open until the stockings have dried. The heat from the sides of the machine will dry the stockings quicker. They must be dry; or otherwise delustered areas will appear on the fabric, and these streaks cannot be removed. We then take the stockings off the forms and leave them stretched out overnight, or at least for a few hours. If they are removed from the forms and placed directly into dye bags, there will be creases in the finished goods.

We do not know much about the use of a drying cabinet, as we do not have one. There are some mills that are using this idea successfully; but since we have obtained good results and a smooth appearance by letting the stockings dry on the forms, and leaving them stretched out overnight, we believe that this method is satisfactory.

One interesting suggestion that we have recently been given is that the formation of air pockets in the pre-boarding machine during the pre-boarding period will cause uneven dyeing, despite any and everything that the dyer can do to eliminate it. The only way to prevent the formation of these air pockets is to have the steam enter into the pre-boarding machine through the bottom, and to have air vents or valves at the top of the machine which will allow the air that forms to be driven off by the steam pressure.

Local conditions with regards to the acetate rayon yarn itself and the man-

ner in which it is thrown, the preboarding equipment, the water, the steam, etc., have a lot to do with the successful dyeing of acetate rayon hosiery, and the suggestions that we have given are the results of our experience. If this information is used as the basis of a starting point with modifications for local conditions, it will be found to give satisfactory results without injury to the stockings.

G. E. B. (*Tenn.*)

Training Loomfixers Quickly

In reply to the inquiry in the June issue G.E.B. on training women loomfixers, I will say that in the near future we will have women loomfixers to run our looms, whether we like it or not. In training women for loomfixers the method of training immediately becomes paramount. The method of training must be efficient, short and intensive. The best method of training is unquestionably the W.M.C. Training Within Industry Program. This method consists of four steps, which applied to women learners would be:

1. Prepare the worker—Put her at ease. Find out what she already knows about the job. Get her interested in learning the job. Place her in correct position.

2. Present the operation—Tell, show, and illustrate carefully and patiently. Stress key points. Instruct clearly and completely, taking up one point at a time, but no more than she can master.

3. Try out performance—Test her by having her perform job. Have her tell and show you; have her explain key points. Ask questions and correct errors. Continue until you know that she knows.

4. Follow Up—Put her on her own. Designate to whom she goes for help. Check frequently; encourage questions. Get her to look for key points as she progresses. Taper off extra coaching and close follow-up.

With this method and under proper surroundings, the setting and adjustments of any loom motion could easily be learned in less than one week. By proper surroundings, I mean a good instructor, a quite and clean class room, equipped with one or more of the company looms, set up for production run but without warp at first. This is so that the various loom motions can be easily dismantled and remounted during the instruction. Later a warp is put in the loom for production run and further instruction is given.

I do not think the suggestion that the women loomfixer learners be taught only to fix one or two loom motions would work out very well, since it undoubtedly would entail a rather great amount of waiting. It could not very well be expected of the second hands or the headfixer to assign every job of fixing. That would make errand boys of them, for they would have to continuously run after the specialized women loomfixers and tell them about the looms which need fixing. It also would happen that at times one particular specialist would be overloaded and others would at the same time have nothing to do. The amount of waiting time for looms to be fixed would therefore be extremely great, and, as a consequence, production would be very low. It must be admitted, however, that if a practical way could be worked out in assigning the jobs, the suggestion of highly specialized women loomfixers would cut their training time down to a fraction of ordinary all-round training. I cannot see how this assignment of jobs could possibly be worked out to satisfaction, and unless G. E. B. has some such system worked out, I would recommend to train the women learners like ordinary men loomfixers with the exception of heavy work—such as for instance, putting in warp, changing driving gears; taking out and putting in crankshafts, rocker shaft, etc.

If the women learners were given full-time practical instruction in setting and adjusting mechanically the various loom motions for three or four weeks by a competent instructor in classroom and thereafter one half of the day in class room and the other half day in the weave room to learn "diagnosis of current loom sickness" under a good loomfixer, she should be ready to go on a section in five to six months.

I. O. M. (*Mass.*)

Training Loomfixers Quickly

Congratulations on the new department, known as "The Mill Men's Round Table."

The letter written by G. E. B. in the June issue on training loomfixers quickly was to me very interesting. Here at Riverside & Dan River our loomfixing is altogether specialized; that is, instead of a fixer keeping up an entire section, he keeps up only one motion of the loom. This is, I think the plan outlined by G. E. B.

We have here already quite a few women loomfixers, or specialists, and plan to put on a good many more shortly. Women are doing as well as, if not better than, men on similar jobs.

The Danville Textile School and the Dan River Textile School have classes of women loomfixers from every weaving department in this organization. We use a plan of instruction—The Job Instruction Training methods as outlined by W.M.C.

We have had the specialized plan in effect here for approximately one year. Here are the specialized jobs: (1) Driving motion man. (2) Let-off and take-up man. (3) Transfer man. (4) Pick-motion man. (5) Harness-motion man. (6) Standard-setting man. (7) Shuttle man. (8) Pick man. (9) Harness man. (10) Warp-stop motion and safety man. (11) Loom aligner man. (12) Shuttle box adjuster man.

These jobs of course, have minor motion adjustments added to each of the several jobs in order to make a complete coverage of the loom.

O. M. (*Va.*)

When to Mercerize

In the April issue of TEXTILE WORLD there was an article on mercerizing cotton piece goods. The author pointed out that the fact a plant has been doing a thing a certain way for a long time doesn't necessarily mean it is the best way. For a good many years we have been mercerizing after kier boiling, washing, and drying.

The author of the article mentioned above stated that his tests showed no appreciable difference in luster of fabrics mercerized before or after kier boiling. By mercerizing before kier boiling, we would be able to cut out a washing operation and a drying operation and would not have to neutralize the goods after mercerizing. We ran some trial pieces through the mercerizing machines after singeing and before kier boiling, then kier boiled, and bleached. When we compared these with pieces which had been run our usual way, we could not see any difference in luster. This seemed to corroborate the tests reported in TEXTILE WORLD.

However, there is one thing that still bothers us. The gray goods contain starch and other impurities. Now, if we should change over to mercerizing before kier boiling, wouldn't these impurities build up in the mercerizing bath, contaminate the caustic solution, and in time reduce the mercerizing effect of the caustic? We reclaim our wash waters and, after evaporating them, use them over and over again for mercerizing, adding enough new caustic to make up for that lost in the mercerizing process. Has anybody had any actual experience in mercerizing before kier boiling and, if so, can they tell me whether it gives as good results as mercerizing after kier boiling.

R.E.H. (*R. I.*)

FIXING HOSIERY MACHINES

Chapter XVIII (Cont.)—Split Foot Machine

By JULIAN W. HUGHES

LATEST MODELS OF THE BANNER SPLIT-FOOT MACHINE may be provided with an attachment that permits the knitting in of an elastic yarn to produce a garter band similar to the regular ribbed top. This attachment is known to the trade as the Lastic-Top. In this article, consideration will be given to the jack cams of the split-foot machine, including those that produce the knitting of the Lastic-Top and to the operation of these cams when holes and drop-stitches appear in the elastic top and eyelet holes make their appearance in the suture seam of the foot.

The dividing cam *1* and front cam *2*, Fig. C51, contact the butts of certain jacks and elevate the corresponding needles to the latch clearing position during the knitting of the Lastic-Top. The eyelet cams *3* and *4* elevate other needles through suitable jacks to prevent eyelet or open stitches along the suture seam in the split-foot.

Front Jack Cam

The front jack cam raises every other needle, therefore it diverts the butts of the jacks by virtue of it being positioned at a 45° angle. This cam operates at the start of the elastic top and helps to knit tuck stitches to bind the elastic yarn.

It is customary, when starting the elastic top, to knit one or two courses of tuck stitches which serve as the welt. These tuck stitches are formed by the needles—every other one—that do not have jacks under them. The needles with jacks under them receive the elastic yarn at the auxiliary side, whereas the yarn for knitting the top is received from the regular feed side. On the next revolution of the cylinder all needles take yarn at both feeds and the tuck stitches are cast off the needles in the usual manner, forming a sort of hem to prevent the elastic and non-elastic loops from raveling. When this welt, or hem, appears ragged in places, or float stitches appear at the start of the top, this condition is generally caused by one or more needle hooks being broken. However, if this defect occurs and the needles seem to be in order, inspect the butts on the jacks to determine if they have been sheared off by the front cams. While jacks will outlast needles, the butts do wear in time and sometimes break. All broken jacks must be replaced.

Screws passing through the end of the cam lever and fastening the front jack cam in place must be kept tight. Needles and jacks in the cylinder grooves are usually lubricated by spraying with light oil from an antomizer. Some of this oil spray will naturally settle on these screws and seep around the threads, permitting them to work loose. This action, together with the vibration of the jack butts contacting the cam as the cylinder revolves during the first courses of knitting may be sufficient to work the cam loose on the lever. Butts are apt to be bent when they contact a loose cam.

When commencing to knit the garter top the front stitch cam is withdrawn and allows half the needles, those without jacks under them, to pass at a level where they will not cast off stitches or take yarn. The front jack cam acts in lieu of the front stitch cam during the formation of the tuck stitch courses by raising the needles high enough to cast off the stitches and take yarn. When the tuck courses are completed, the front stitch cam is brought back into active position again, and all needles are elevated for regular knitting. The front jack cam does not control the knitting of the Lastic-Top after the tuck courses are completed, but this writer has known fixers to set the control drum so that the front jack cam remains in operative position during the entire knitting of the top. This is bad practice because it subjects both the cam and the jack butts to unnecessary wear and tear.

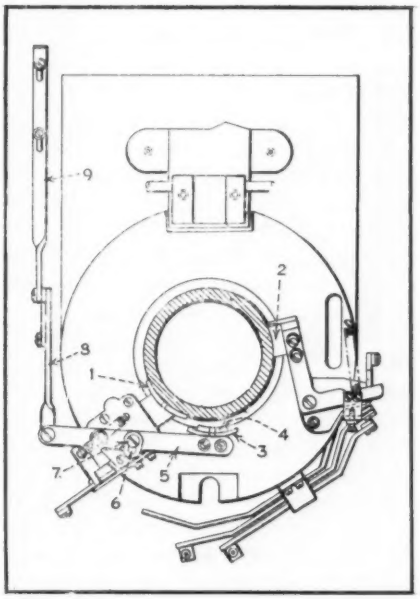


Fig. C51. Cross-section of lower cylinder showing the jack cams and connections for raising needles to knit suture seam and elastic yarn in the ribbed top.

Chapter XXI (Cont.)—Belt Maintenance

CLEANING BELTING AND APPLYING LUBRICANTS are best accomplished just before the machines are shut down for the weekend. When the machines are started again on Monday morning, the belting will be in good condition. If the cleaning and oiling are done long before stopping for the week, fly and grit will be deposited on the freshly oiled surface of the belts. This tendency will, of course, be greatly lessened while the machinery is not in motion. Oil can best be applied with a brush and spread evenly over both sides of the belt so it will penetrate thoroughly.

Some knitters on circular machines, during the last few years, have attempted to prevent the belts from slipping and consequently, increase the speed and production of their machines. Their method consists of pricking the face of the pulley with scissors or some sharp-pointed instrument to raise burrs which grips the belt. This practice only affords temporary relief, since the burrs soon wear off the face of the pulley, leaving small holes and pits. The burrs will penetrate the leather and tear the fibers near the surface and make the contacting surface of the belt rough, whereas it should be smooth. A rough belt surface wears rapidly.

LOOMFIXERS' MANUAL

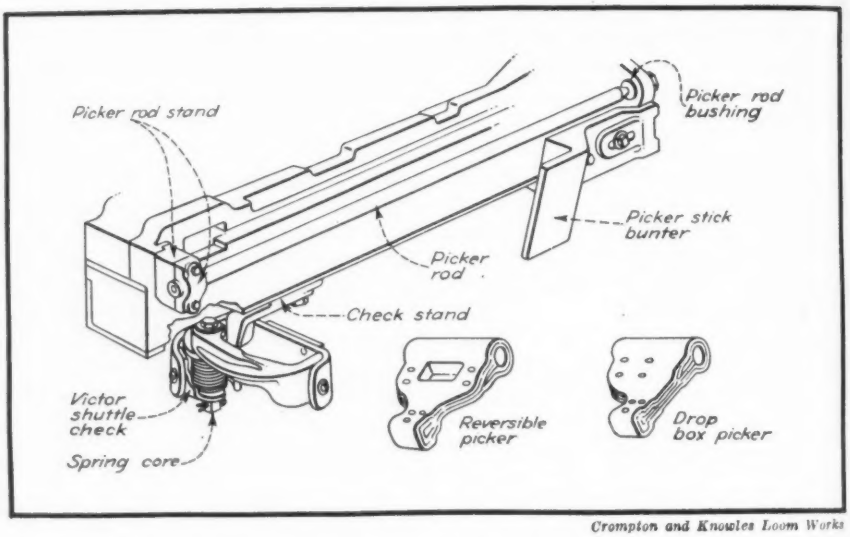
WOOL SECTION—Chapter XV (Continued)—Lay Motions

By EUGENE P. SCHREMP

PICKER ROD STAND. Fig. W33, can be raised or lowered slightly by loosening the capscrew that holds it to the box back and box end. It should be so set that the tip of a boxed shuttle will strike in the center of the picker. If the tip of the shuttle does not strike the picker in the center, its life will be shortened. To determine the proper size picker at ordering, use a pair of dividers and measure the distance from the center of the picker rod to the tip of a new shuttle placed in the box. This will insure having the proper size picker for the shuttles.

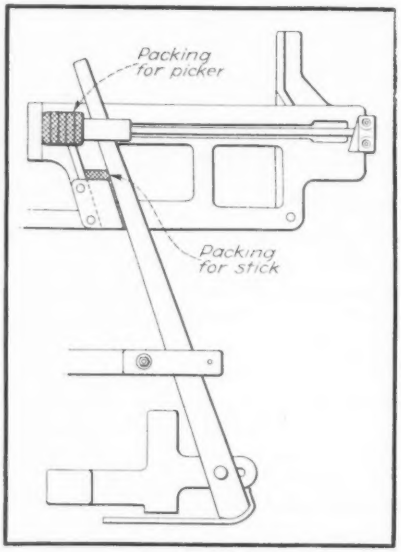
Packing of some sort must be used on the picker rod to stop the picker at the end of the forward stroke. Old belting cut in squares with a hole the size of the picker rod punched out are used by some fixers, while others make a roll of cloth and wind string around it and use leather blocks at each end to hold it in place. To prolong the life of reversible pickers, packing on the rod and picker stick bunter must be so arranged that the stick and the picker are stopped at the same time. If there is not enough packing on the rod the picker will soon wear out at the back. To prevent this, some mills do not use packing in the picker stick bunter, but depend on a long cloth roll on the picker rod. A method of packing the picker and the stick is illustrated in Fig. W34.

A Victor shuttle check, illustrated in Fig. W32 appearing in the May issue, is used to prevent the shuttle from rebounding and to absorb the shock of the shuttle coming to a stop. Both spring and friction action are used in this check, the coil spring holding the leather strap tightly against a friction plate on the stand. When the leather strap becomes hard or oil soaked it should be replaced. Proper adjustment is made by moving the stand so that the back of the picker is 1½ in. from the stop packing in the box end. Tension of the spring should only be sufficient to prevent the shuttle from rebounding. Two wrenches are necessary to regulate the spring tension, one to loosen the capscrew at the top and the other to turn the squared bottom of the spring core. It should be remembered that the check spring must never be tightened beyond a point where the binder pressure cannot hold the shuttle in place. An improperly operating check will cause serious trouble, because the shuttle must be properly boxed. Too much check will also cause excessive wear on the picker stick and check straps. Bearing surfaces should be well lubricated, but care must be taken not to allow oil to get on the leather check strap.



Crompton and Knowles Loom Works

Fig. W33. Plain end of lay of C & K, W-2 and W-3 looms.



Crompton and Knowles Loom Works

Fig. W34. Packing the picker and the picking stock.

The lay end used on the drop box side of a C & K, W-2 and W-3 loom, is assembled at the loom works. Proper alignment is secured by special gages and templates. If all bolts and capscrews holding the lay end are kept tight the original factory alignment will be maintained.

Downward pitch should be the same as on the single box side; that is, $\frac{3}{32}$ in. clearance between the edge of a 48-in. straight edge at the beginning of the race plate. Box lay ends should also be aligned so that when the straight edge is pressed firmly against the box back it will project $\frac{3}{4}$ in. into the reed line. This alignment is controlled by the two setscrews in the front of the lay end and shims placed between the two projections of the lay end and lay. This arrangement acts as a clamp and holds the lay end in its proper alignment.

QUESTIONS & ANSWERS

Mercerizing Cotton Piece Goods

Technical Editor:

We read with a great deal of interest the article in the April issue of TEXTILE WORLD "Mercerizing—A New Approach," by A. C. Tate. Following are some questions which we have on the subject.

1. Do most of the other plants mercerize their goods before the boil and bleach or after the boil and bleach?
2. Are the goods desized before mercerizing?
3. What speed do they run their mercerizer?
4. What is the temperature of the caustic used in the mercerizing mangle?
5. Are the mercerizers equipped with two mangles or one and are they two roll mangles or three roll mangles?
6. What kind of a washing arrangement do they have on the mercerizers other than the wash boxes, and how far is this arrangement from the entering end of the mercerizer chain?
7. How many wash boxes do they have on the end of the mercerizers and what is the accepted temperature of the water in these wash boxes? (8904)

As was inferred in the article on mercerizing in our April issue, there is no standard procedure which is universally employed in all plants. However, the following replies to your questions are indicative of the methods ordinarily employed.

1. Probably the most common practice is to kier boil the fabrics, then mercerize and bleach. Formerly, the practice was to mercerize on dry cloth, but today nearly every plant has developed some method of mercerizing wet cloth. In some plants, mercerizing is carried out on gray goods which have merely been singed, wet out, and mangled. In still others, mercerizing is carried out after kier boiling and bleaching.

2. Several years ago it was suggested that cotton piece goods be singed and desized in one continuous operation and then mercerized wet. A good many plants have adopted this method, but others mercerize without desizing as mentioned above.

3. The speed at which mercerizing is carried out ordinarily ranges from 60 to 65 yd. per min., but some plants operate their mercerizing machines at speeds as high as 80 yd. per min.

4. Formerly it was the usual practice to cool the caustic in the mercerizing mangle to about 40°F. Today most plants are running at considerably higher temperatures; for example, 65 to 70°F. is preferred in many plants. In others, however, the temperature is permitted to go as high as 90° or 100° F.

5. Practically all mercerizers agree that two mangles of the 3-roll type are preferable.

6. Ordinarily, spray pipes are located above the tenter at about ¼ of the distance from the delivery end. Dilute caustic solution which has overflown from the wash box or recuperator is pumped through these spray pipes and allowed to percolate through the cloth. On a 60-ft. tenter the first of the spray pipes would be about 45 ft. from the entering end of the mercerizer chain.

7. Most plants employ either a 4-compartment recuperator or a 4-box washer operating on the counter-flow principle. The temperature of the water in the wash box is usually maintained at about 170° to 180° F. The recuperators are usually fitted with perforated steam pipes located between the guide rolls to allow steam to be sprayed on the goods as they pass through the recuperator. Water is sprayed on the cloth as it leaves the recuperator, proceeds counter-current to the cloth, and overflows at the front end of the recuperator.

Drafts and Twists for Spun Viscose Rayon

Technical Editor:

What drafts and twists are suitable for spun viscose rayon yarns? (8911)

For conventional-draft frames the desirable range of drafts when running double roving varies from 10 to 13, on long-draft frames using double roving, 16 to 18. When running single roving, 7 to 8 is better for conventional draft, and 8 to 12 for long-draft frames. These figures are only approximate guides, giving a safe range of drafts for the average staple and yarn number.

Too high a twist tends to shear the fibers; and with too low a twist, the fibers are likely to slip. The range of twists depends upon the denier and staple length. As a guide, in a 30s yarn 1.5-den., 1⅛-in. staple, a twist multiple of 3 gives the best strength. Higher counts and coarser staples require higher twist multiples. A 20s yarn using a 3-den., 1⅛ in. staple requires a twist of 3¼, and a 16s yarn of 5 den., 1⅛-in. staple requires a twist multiple of 4. Other staple lengths and deniers will require changes in twist multiple to secure optimum strength.

Defect in Knit Fabric

Technical Editor:

We are inclosing a piece of knitted fabric made of 8/1 and 2 ends of 16/1 cotton in alternate feeds. This fabric was made on an 8-cut Wildman machine, 23 in., with 576 cylinder and 576 dial needles, 24 gage. We should like to know what is wrong with this cloth particularly why it feels smooth on the outside and rough on the inside. Also why the stitches on the outside are smaller than the stitches on the inside, and how these conditions can be overcome. Please comment on the cloth. (8902)

The appearance of the fabric indicates that three conditions are contributing to your trouble: (1) Apparently the needle slots in the machine, particularly the slots in the dial, are packed with gummed oil and lint to such an extent that the dial needles rest on different levels, in which case the cylinder needles draw stitches of different lengths. (2) The dial needles probably are being drawn into the dial too deeply and are robbing the cylinder stitches to too great an extent; particularly on the white feeds. (3) The dial cast-off cams are not drawing the needles to the same depth on all feeds.

To remedy the trouble the following steps should be taken. The machine should be thoroughly cleaned, particularly the slots in the dial, so that the needles will rest on the bottom of the slots and present an even line of dial needles. The dial cast-off cams should then be let out to a point at which the needles will just cast off the stitch when the machine is turned by hand. Then give the adjusting screw a quarter turn inward for safety's sake. If convenient, use a gage of some kind to assure that the dial needles are drawing into the dial to exactly the same distance on all feeds. See that the take-up gives a reasonably strong pull on the fabric. By measuring a length of yarn on all feeds, see that the cylinder needles are drawing the same length of stitch on all feeds.

Ordinarily, on latch-needle rib-knitting machines, the inside or dial side of the fabric presents a smaller stitch and a more uniform appearance than the outside or cylinder side of the fabric. That is due to the fact that the

(*Continued on page* 128)

KINKS & SHORT-CUTS

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A $25 War Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contributions must be received not later than the last day of the month to be eligible for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production; in brief, any little device, stunt, kink, or short-cut which you have tried out in your own mill and which you believe will be helpful to other mill men. The items should be short, preferably not over 300 words. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any item submitted. Items which are published will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York.

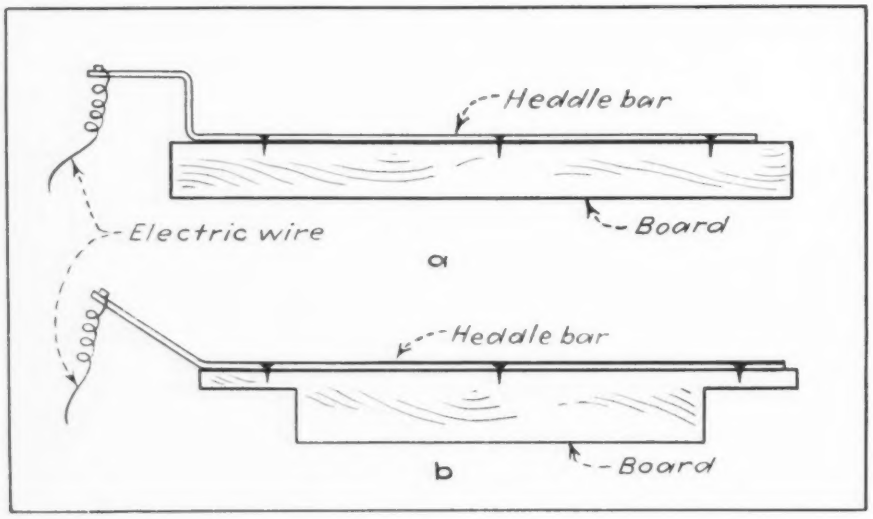
Harness Stop-Motion

THIS MONTH'S PRIZE WINNER

Every effort must be made today to insure maximum production and quality in woven fabrics. Needless damages to warps may be prevented by using a harness stop-motion that is easily applied to all looms equipped with electric warp stop-motions. This stop-motion knocks-off the loom the instant a harness strap breaks.

A board *a* is placed in the arch of the loom beneath the harness wires, a broken heddle being nailed to the top of the board. Run a wire from the heddle to the electric warp stop-motion bolt. Another board *b* is placed beneath the harness wires next to the jacks. Likewise, this board is fastened to the arch of the loom and also has a broken heddle nailed to it. A wire connects the heddle with the electric stop-motion.

Whenever a harness strap breaks, the harness wire connected to the strap will slacken and drop, contacting the heddle wire nailed to either the board *a* or *b*, or both. As the harness wire is in contact with the jack, which is grounded to the loom framework, an electrical circuit is set up which operates the electric warp stop-motion. Hence, whenever a harness strap breaks, the loom is stopped before extensive damage has been done to the warp.—JOHN STERK, *Janesville, Wis.*



Contact points of harness stop-motion.

Machine Repairs

Manpower and material shortage make it important that machine repairs be made wherever possible, and it is essential that the repaired parts be as nearly perfect as they were originally. Welding permits the repair of cracked or broken castings, and the use of bronze in welding cast-iron parts where drilling or tapping must be done is preferable to cast iron welds. Also, in many places where pins or riveted studs have worked loose and enlarged their holes, new pins or studs may be brazed in place so they will not loosen again.

Where screw threads in tapped holes are stripped or damaged by cross-threading, or more commonly by an attempted insertion of a screw having the wrong number of threads per inch, there are several ways of making a permanent repair. While the damaged hole may be enlarged and then welded full of bronze by holding a piece of carbon against one side of the piece or casting, then refinished, drilled and tapped, this method usually requires the stripping of all hardened parts from the vicinity of the welding. Good repairs can often be made in other ways.

Where adjacent parts do not pre-

vent repair, a simple way is to use a screw long enough to take a nut on the end of the screw which projects through the metal. However, in places where a nut may not be used, quite often it is possible to drill and tap for a larger screw, which should be inserted and then secured with a small pin *A*, Fig. 1, to prevent its turning

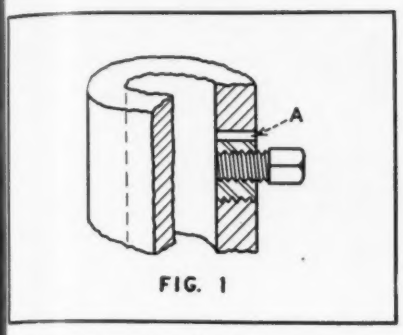


FIG. 1

Fig. 1. Tapping for larger screw.

before being drilled and tapped for the regular screw. For the final drilling and tapping, except for setscrews, the part or cam to be secured should be firmly clamped in position with a handscrew or clamps, then spotted through the cam with a body size drill, then drilled with the tap size and tapped.

When it is necessary to move a cam to correct its timing, and new tapped holes are required which do not clear the original holes, flat head screws may be placed in the old holes flush with the face of a cylinder or other parts. The screws should be long enough to take nuts where they project through the work, and these should be tightened firmly before attempting to redrill for the new holes. Then, the cam may be placed in the new position, firmly clamped in place and spotted, drilled and tapped for the new holes. Or, screws may be inserted from the side opposite the cam having nuts which may be firmly tightened, as shown in Fig. 2.

Where trouble occurs because cams have loosened until their position cannot be accurately maintained because of machine smashes, they may be

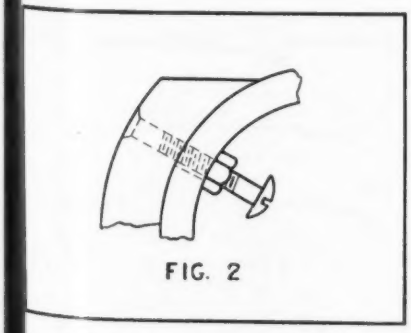


FIG. 2

Fig. 2. Tapping new holes.

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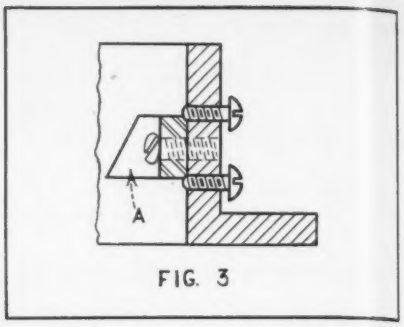


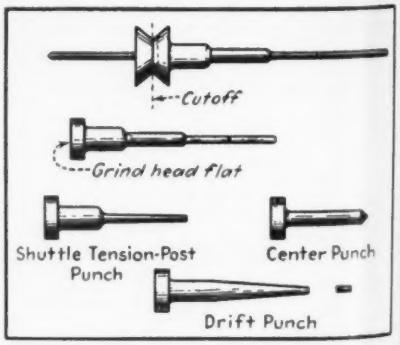
Fig. 3. Method of locking cams.

locked in place by two setscrews located as illustrated in Fig. 3. For example. The cam *A* is first accurately clamped in position and small holes are drilled on each side of the cam where they will not interfere with adjacent machine members, the cam is then removed and the holes redrilled and tapped for the setscrews. Clamp the cam firmly in the required position and then tighten the setscrews to lock the cam in position. Note that the points of the setscrews should be slightly rounded. Have them casehardened for the best results. This method has given excellent results in locking needle cylinder cams in a knitting machine.—W.A.S., (*N.H.*)

Tools from Spindles

Since many necessary tools are very difficult to obtain, more thought should be given to the making of tools from discarded steel machine parts. Many of the short-blade type spindles, which have long been discarded by the mills installing long blade types, are made from an excellent grade of steel and can be fashioned into a number of useful tools.

To make punches, as illustrated, cut the spindle end off and grind the heavy end to a flat surface if it is beveled. The spindle end can be shortened and ground to any shape desired. If the spindle is ground off near the point end, very good shuttle tension-post



Tools from old spindles.

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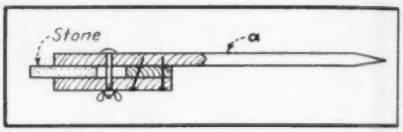
punches can be made. Long blade spindles make good drift punches. Any type spindle can be easily turned into a serviceable screw driver. The three punch ends illustrated are examples of some of the tools that can be devised.

Punch ends can be casehardened by heating the ends with a blow torch or other means and covered with a layer of powdered potassium cyanide. The powder is allowed to melt in, and the points are then heated until red and dipped into cold water.—W.E.H., (*Pa.*)

Reed Rubbing Tool

Loomfixers frequently find it difficult to rub reeds while in the loom because the reed cap shuttle guard is usually in the way. A simple tool that permits rubbing while the reed is in the loom is shown.

This tool is made of three pieces of heddle-frame wood. The long piece *A*

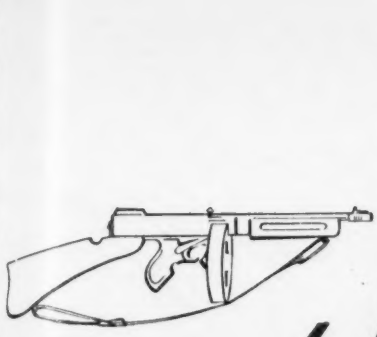


Simple clamp for holding reed-rubbing material.

has one end whittled down to a knife edge, this edge being useful in bending reed wires. The three pieces are fastened together with nails or screws. A ¼-in. carriage bolt with a washer and wing-nut makes a clamp for holding an emery stone, pumice, rubber or other material being used to rub the reed.—C.S.B., (*Ga.*)

Modified Feeder for Woolen Cards

A simple change at the feed of a card permits inexperienced help to operate it, and at the same time produce quality work by keeping wool against the spiked lifting apron under constant pressure. The 12-in. backboard at the top of the feed box is removed and two boards, 27 in. x 12 in. are substituted on a 60-in. card. These two boards are hung over the comb shaft, using 1 in. x ¼ in. strap iron supports, as illustrated. An iron bracket made of ¾ in. x ¼ in. strap iron is bolted to the center of each board and carries weights which may be varied in number or position to obtain the pressure desired against the wool in the hopper. Weights weighing about 8 lb. are cast having a hole in their center



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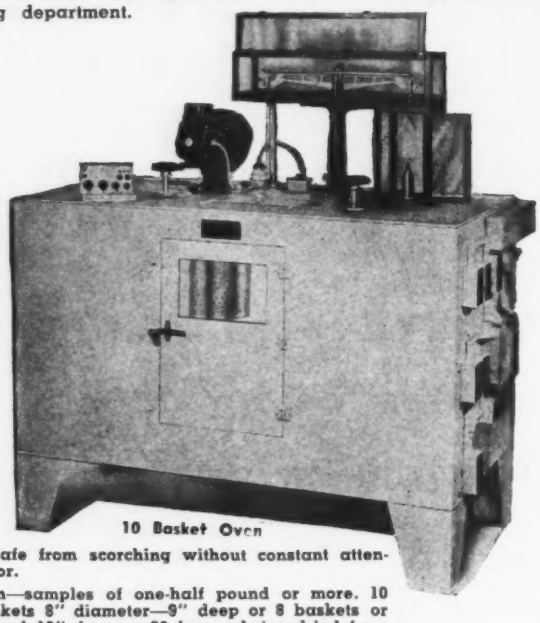
HOW FAST WILL SAMPLES DRY?

Emerson ovens are electrically heated and temperature is controlled by thermostat. Fans provide air circulation in ovens.

Bone-dry weights determine moisture regain in fabrics, yarns, and raw materials.

Sensitive scales for weighing samples within the oven can be operated without opening the oven door. Savings can be made by checking specifications for each manufacturing department.



10 Basket Oven

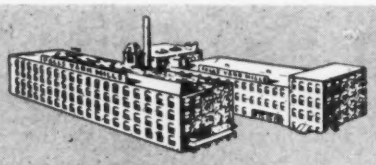
Samples are safe from scorching without constant attention of operator.

10-Basket Oven—samples of one-half pound or more. 10 cylindrical baskets 8" diameter—9" deep or 8 baskets or reels 7" x 7" and 18" deep or 20 large skeins dried from hooks.

Floor space 3' x 6'

EMERSON APPARATUS COMPANY

171 Tremont Street — Melrose, Massachusetts



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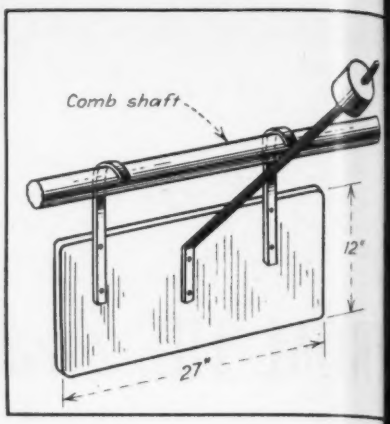
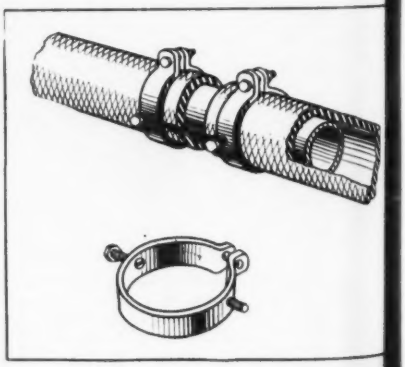


Weighted feeder board prevents e cessive amounts of wool from bei placed in hopper by inexperience card hands.

of sufficient size to permit them to slipped over the iron bracket. A ho is drilled and tapped in the weight h a setscrew which is used to hold t weight in any position on the weig bracket. When the weight has be positioned correctly for the kind stock being run, excessive materi placed in the hopper by inexperienc help will force these weighted boar back and permit excessive stock to r out.—W.C.K., (*Wis.*)

Easily Made Hose Coupling

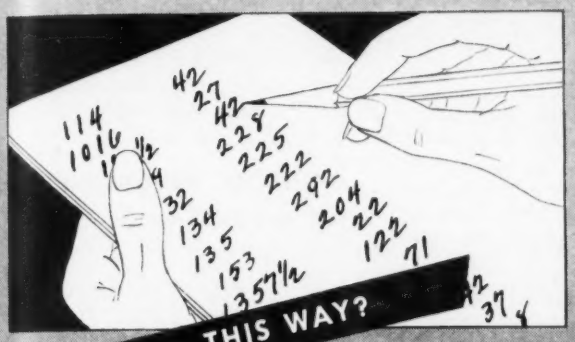
Quite often around the mill one h to improvise repairs, especially th days of material shortages. A couplin for joining two lengths of hose w made, as shown in the illustration.

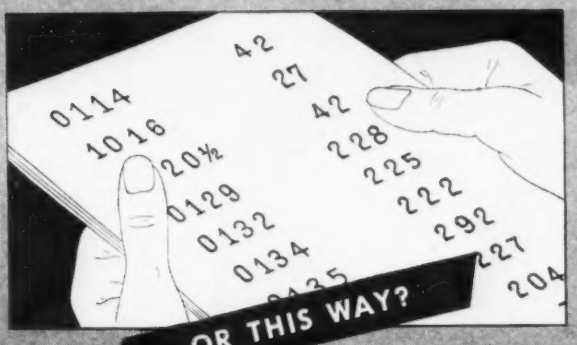


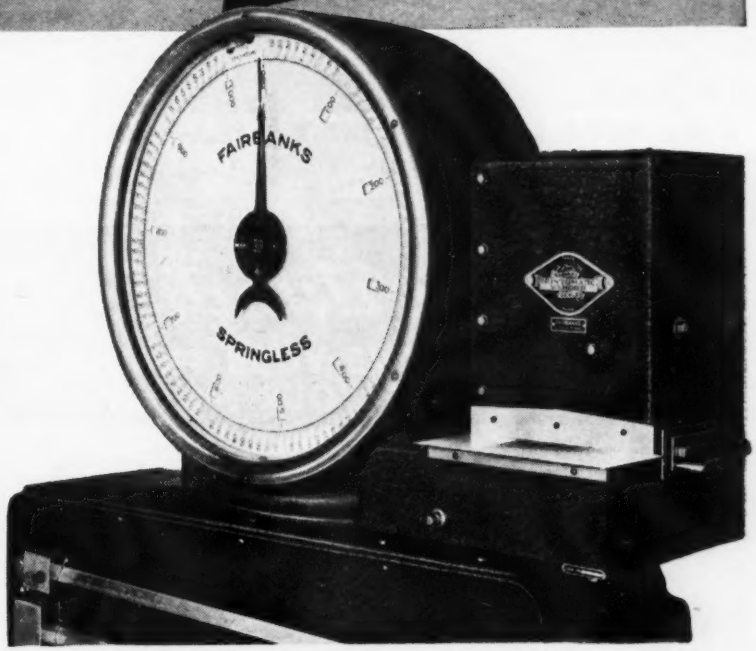
Home-made hose coupling.

piece of ordinary pipe of a size to snugly inside the hose was found a the two special clamps, as shown, we made. The real feature of the kink the two clamps provided with scre over which wire can be wrapped keep the hose from pulling apa W. C. H. (N. H.)

How Are Weight Records Made In Your Plant—







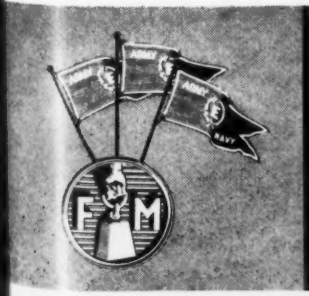
For precision weighing and precision recording use *FAIRBANKS SCALES* with *PRINTOMATICS*

● Of course, *sustained accuracy* in the weighing machine is vitally important. But no matter how accurate the machine is, unless weights are *accurately recorded,* the element of error still remains.

Fairbanks Scales with Printomatics eliminate these human errors—because the scales read the weight automatically and then automatically make a *printed* record of the weight. In addition to eliminating errors, Fairbanks Scales can be fitted into your production flow to do a variety of jobs better than they can be done in any other way. Fairbanks Scales weigh loads in motion . . . count small parts . . . record the flow of liquid chemicals . . . guard secret formulas in compounding . . . control batching . . . automatically control ingredients . . . automatically control aggregates . . . and many other jobs.

The organization which made Fairbanks the greatest name in weighing brings you 113 years of scale manufacturing experience. That, too, is worth serious consideration.

Fairbanks, Morse & Co., 600 S. Michigan Avenue, Chicago, Illinois.



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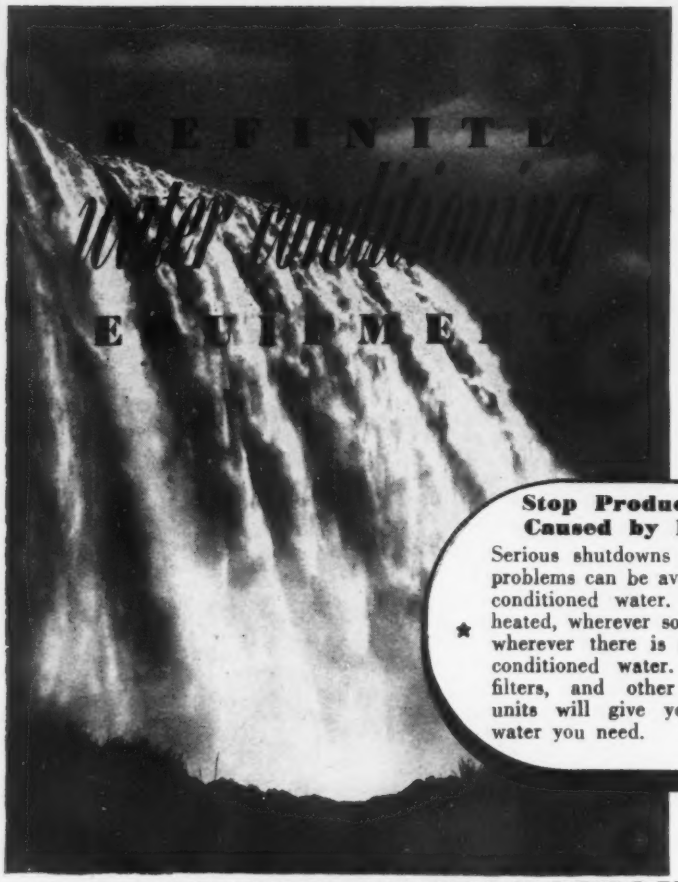

Stop Production Delays Caused by Hard Water

Serious shutdowns due to hard water problems can be avoided with properly conditioned water. Wherever water is heated, wherever soap or soda is used, wherever there is a boiler, you need conditioned water. Refinite softeners, filters, and other water-conditioning units will give you the conditioned water you need.

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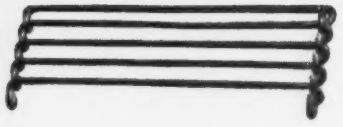

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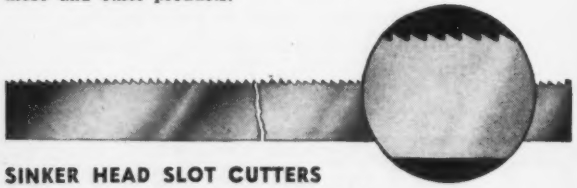
Accurately made from high grade material—built to last and to hold its shape.

Send for bulletin giving full details on these and other products.



SINKER HEAD SLOT CUTTERS

The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

THOMAS & SKINNER
STEEL PRODUCTS COMPANY

1119 East 23rd Street — Indianapolis, Indiana

QUESTIONS & ANSWERS

(*Continued from page* 119)

length of stitch is entirely drawn by the cylinder needles. In so drawing the stitch, the yarn is subjected to the pull of the cylinder needles and undergoes more or less of a "creep" through the hooks of the cylinder needles and over the dial needles.

The dial needles simply form a loop in the yarn that is drawn over them and there is no "creep" of the yarn caused by their so drawing their loops. As the dial needles form their loops some time after the cylinder stitch cam has completed the stitch and released the needles, they can pull yarn from the cylinder stitch without opposition.

Lighting Recommendation for Gray Goods Mill

Technical Editor:

What illumination is considered standard for various departments in a gray goods mill? (8914)

The table below is reproduced from I.E.S. Transactions Vol. XXXII No. 3 in an article "Fluorescent Lighting," in the May, 1942 issue of TEXTILE WORLD. These can only serve as a guide and special conditions may require an engineering survey.

Operation	*Foot-candles*
Storage, Opening, Mixing, Picking, Carding, Drawing	5–10
Slubbers, Intermediates, Roving, Spinning	10–20
Spooling	
Warping (on comb and running ends: 10-foot candles)	...
Slashing (on comb and warp beams: 10–20 foot candles)	15–30
Drawing-in by hand (general: 10 foot-candles)	100+
Automatic Tying-in (general: 10 foot-candles)	50–100+
Weaving (on cloth)	40–60
Inspecting (cloth turned by hand)	20–50
Cloth Room	10–20

Filling Drawn Into Cloth

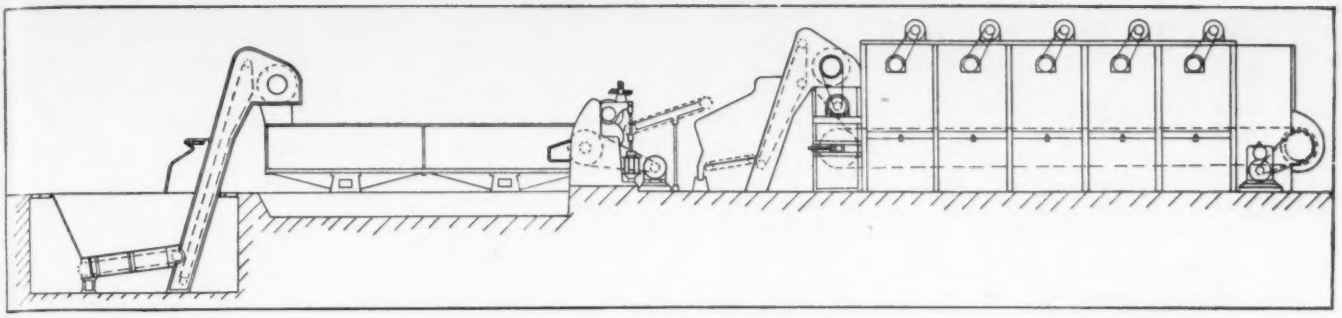
Technical Editor:

We have had considerable trouble lately with short lengths (4 in. to 10 in.) of filling being drawn into the cloth on our Modified D Draper looms, particularly, soon after a transfer. We have followed the procedure that has been successful in correcting this fault in the past, but this time we cannot get satisfactory results.

It is entirely possible that we have become stale, lost our touch, or have just forgotten what to do.

I will appreciate it if you would list in your questions and answers column, a good procedure to follow to remedy this situation. (8918)

Your statement that the defect occurs soon after a transfer would indi-



THIS IS THE UNIT FOR CONTINUOUS RINSING, EXTRACTING AND DRYING OF DYED RAW STOCK

THE line cut illustrated on this page shows the Hunter developed and engineered continuous range method of handling stock directly from the Raw Stock Dye Kettle discharge to the Dryer discharge. The method of operation is as follows:—

The Dye Kettle "cheese" is dumped into the Hunter Pit Feeder from where it goes into a Hunter Rinse Bowl which rinses the stock free and clear, through Hunter Pneumatically Operated Squeeze Rolls, and directly into the Stock Dryer. There is no handling between the Pit Feeder and the Dryer.

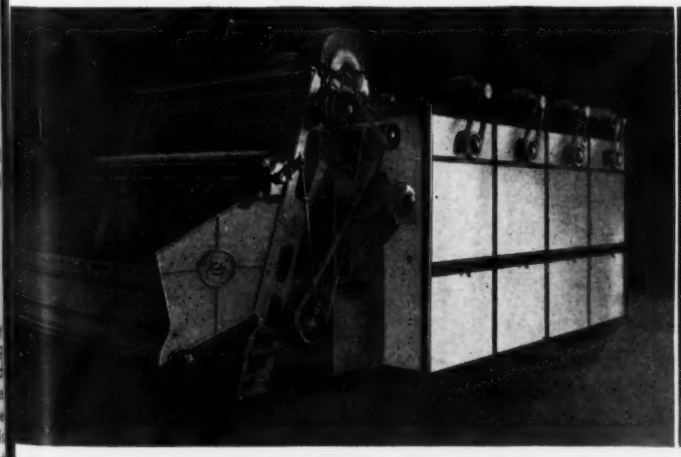
The unit shown above is capable of producing up to 1200 pounds of dyed wool per hour.

After the stock is discharged from the Dryer, it may be either sheeted or blown directly from a hopper to the card room or your stock bins.

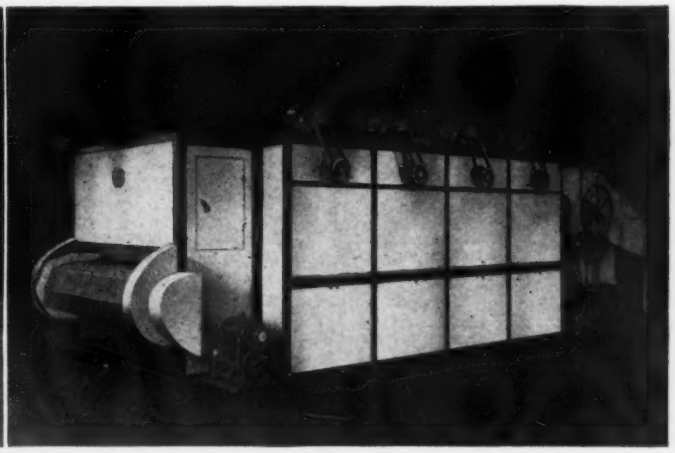
This is the latest and most approved method of handling stock from the Dye Kettles.

Hunter equipment is also available for blending and mixing wools, together with the necessary conveying and blowing systems.

Full details on modern installations on request.



Uniflow Stock Dryer with standard feed



Uniflow Stock Dryer with rotary feed

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS
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Uncle Sam is getting all of our production efforts for the duration of the War.

But our research and development work is still going ahead and you will profit by its results in greatly improved machines for yarn throwing, as soon as peace returns.

U. S. ACME TWISTERS FOR SPOOL OR HEADLESS PACKAGE

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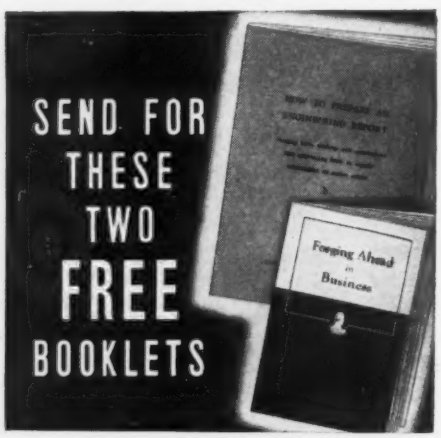
SCRANTON, PENNSYLVANIA, U. S. A.



All ambitious production men who are genuinely interested in self-improvement—in preparing for the future—are invited to send for "Forging Ahead in Business." This valuable booklet outlines the Institute's time-tested training plan. It was prepared by the Staff in cooperation with prominent industrialists.

"How to Prepare an Engineering Report," a helpful 72-page guide ordinarily available only to subscribers, will be sent with "Forging Ahead in Business" while the supply lasts.

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cate that it is the temple cutter that does not work and the filling from the transferred bobbin is broken by the pull of the cloth, the free end snapping into the cloth. However, it is very rare indeed that trouble with the temple cutter can not be fixed without much difficulty by any loomfixer. Consequently, we are assuming that the defect does not occur "soon after a transfer" but just before, or at the transfer. Unfortunately, you did not state whether the looms are equipped with Draper-Roper or Stafford filling cutters. However, we will further assume that the looms are equipped with Draper-Roper (cutter on shuttle-feeler) filling cutters and that it is the failure of these cutters to cut the filling from the outgoing bobbin just before, or at the transfer, that causes the trouble. This trouble is common with this old type of cutter. It cannot be entirely eliminated, although by correct setting of the cutter and constant watching the defects may be held below the tolerance. Equipping the loom with new Stafford filling cutters will eliminate the defects of pull-in.

The Draper-Roper cutters can never be depended upon to prevent pull-ins, even though they are adjusted as well as possible. There are altogether too many uncontrollable conditions with this cutter to make it foolproof. This cutter operates approximately 15 in. from the shuttle eye, giving the filling a freedom to flip over or under the closing jaws of the cutter. Further, if the filling goes into the jaws and is properly cut, the long end from the shuttle eye to the cutter may be pinched between the shuttle and the box front, so that the outgoing bobbin is unable to pull the tail end out of the shuttle eye, and a pull-in is sure to follow.

Proper setting of the Draper-Roper cutter is relatively simple and includes the following steps.

1. Check the 90° angle between the top of the shuttle feeler and the cutter stand. File, or build up stops, if necessary to obtain this angle.

2. Check the cutter's ability to cut the filling. Right side of filling knife must cut the filling cleanly, while left side must pinch the filling against the grip blade, so that the end is held firmly until cut by the temple cutter. Cutter knife may need sharpening on right and dulling on left side.

3. Check, and adjust if necessary, the length of latch finger with loom on front center.

4. Set starting rod in transfer position.

5. Move lay forward until bunter just comes into contact with raised latch finger.

6. Set shuttle feeler so that its tip will be ¼ in. from the polished surface of the box back and so that its under side will just clear and parallel the lay end.

7. See that the starting rod finger has the proper height to hold the cutter in cutting position firmly against the stops. Avoid "limber-neck."

8. Depress cutter against the spring resistance to its normal position and see that it does not snap free from the starting-rod finger, in which case the finger is too short.

9. While it is held in normal position, close the cutter and permit the opening trip to open the cutter on the release. The cutter must be fully opened by the trip.

10. Place a piece of filling loosely in the cutter and move the lay forward until bunter just touches the latch finger. At this point the filling should be cut and held by the fully closed cutter blades. The cutter is now set properly and the more difficult job of placing the filling in the small cutter opening is the next step. Following are the conditions he may have to check on and remedy.

1. See that the filling is properly conditioned.

2. Check the bobbin for being in center of shuttle.

3. Apply proper filling tension in the shuttle.

4. See that the loom does not pick too hard.

5. See that the shuttle does not rebound.

6. See that the check strap brings the shuttle to a slow stop.

7. See that the filling groove at front of shuttle is deep enough.

8. See that the filling groove in the boxfront leather is deep enough.

9. Keep the bobbins in can low, so as to give bobbin a long drop.

10. Check to see that the shuttle remains on box floor at impact with pitch.

11. Do not permit the shuttle to wobble during its flight.

12. See that the shuttle does not slap the box front.

13. See that the cutter blades are not too tight.

14. See that the box floor is not higher than the race board.

15. See that the cutter is in cutting position on time.

16. See that the blade screw does not strike the box front.

17. Check with gages to make certain the cutter is not too close to the shuttle point.

18. Check to see that the passing of the shuttle is not so late that it will brush the cutter aside.

TEXTILE BANKING COMPANY

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

NEWS OF THE MONTH

Takes First Steps in Post-War Program

A practical approach to its post-war program is being made by the Atlantic Rayon Corp. which is putting into effect the initial steps in that program. The corporation has purchased the Suncook (N. H.) Mills, a rayon weaving plant. Through this acquisition, Atlantic Rayon Corp. will be assured an ample supply of suitable rayon fabrics for conversion in its sewing plants to consumer products. It will make the corporation completely integrated from raw yarn to retail store distribution. As a further step in implementing its post-war program, the company has formed a wholly-owned subsidiary, Textron, Inc., under the laws of New York, to develop and merchandise synthetic fabric consumer goods for distribution direct to retail outlets.

While keeping its entire facilities available to meet the needs of the Armed Services, Atlantic's new policy will insure continued employment for its thousands of highly skilled employees against a possible slackening of Government war orders, by utilizing all facilities not needed for war materials for the production of essential civilian goods.

"If we reduced our working force as war contracts decline," states Royal Little, president of the corporation, "we would be unable to rebuild our organization on short notice to produce such war materials as the Government might require from time to time."

Atlantic Rayon Corp. is currently producing large quantities of human escape and paratrooper parachutes, cargo chutes for tanks, big guns and vehicles, bomb fragmentation chutes, ponchos, jungle hammocks, mountain tents, and other synthetic textile materials for the Army and Navy.

In addition to its new Suncook plant, the corporation has a plant at Providence, R. I.; and one at Manchester, N. H., and two plants at Lowell, Mass.

J. Linzee Weld, president of Suncook Mills, will become treasurer and a director of Atlantic Rayon Corp.

CHICAGO YARN MEN'S CLUB, organized by the leading yarn men in the Middle West 22 years ago, has presented a 1942 automobile to the Red Cross, to be used in connection with the operation of the Mobile Blood Donor Service and other Red Cross functions. For 20 years the Chicago Yarn Men's Club has invited as its guests all executives of the hosiery and underwear mills in the Middle West to an annual Golf Tournament. Last year, it was decided to forego the Golf Tournament and make a donation to the Red Cross, specifically ear-marked for War Prisoner Relief. This year the Golf Tournament is again cancelled and the automobile donation to the Red Cross takes its place.

FELT FUNCTIONS FOR SPONGE RUBBER—Above is shown wool felt cushion replacing sponge rubber pad in bucket seat in Lockheed AT-18 navigator's trainer. Wool felt is doing a similar job in many other parts of war planes.

Advisers for N. C. Textile Institute

An advisory board has been appointed by members of the North Carolina Textile Institute Commission. The members of the advisory board are W. M. McLaurine, secretary of the American Cotton Manufacturers Association, Charlotte; W. K. Mauney, of Kings Mountain; R. Dave Hall, of Belmont; Hunter Huss, of Gastonia; John F. Schenck, Jr., of Shelby; B. B. Gossett, of Charlotte; C. C. Dawson, of Cramerton; E. R. Lafar, Jr., of Gastonia; and C. E. Neisler, of Kings Mountain.

The board has also elected a superintendent, M. L. Rhodes, of Lincolnton, assistant state supervisor for trade industrial education. T. W. Bridges is principal.

▼ ▼ ▼

Optimistic on Covering Consumer Rayon Needs

Sufficient quantities of rayon will be available this year to meet civilian needs, according to a recent statement by Frank L. Walton, Director of the Textile Division, WPB. In 1942, total rayon production was 631,000,000 lb. "With the total planned for 1943," Walton said, "we feel confident that military requirements can be taken care of without seriously cutting into supplies for other purposes."

In summing up the picture, Mr. Walton stated that after deducting all military and foreign requirements for rayon, including the tire program, and after making provision for replacement by rayon of 30,000,000 lb. of silk which were consumed in 1939, there will be available this year for civilian trade the same amount of rayon as was available in 1939.

At the same time Mr. Walton revealed that rayon yarn and fiber production in the first quarter of this year was 4% greater than in the comparable quarter of 1942—160,400,000 lb. as compared to 153,900,000 lb.

Reports that production of high tenacity rayon for the synthetic tire program will remove from the market large

Maybe You Should Be Using

Johnson's DRAX

New water-repellent textile finish for all textiles, yarns, twines, etc.

☆ BUY U. S. WAR BONDS AND STAMPS ☆

Here are the facts! DRAX is an aqueous emulsion of waxes, aluminum salts and emulsifying agents, developed for textile finishers by S. C. Johnson & Son, Inc.

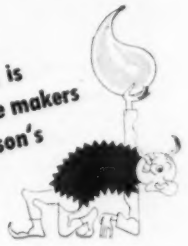
Due to a special method of regulating the colloidal particle size of the emulsion during its manufacture, DRAX possesses important characteristics not found in many water repellents:

1. **Drax provides high water repellency for all textile fabrics**
2. **It remains completely stable in solution during storage**
3. **Its acidity (pH 3.5 to 5) requires a minimum of control**
4. **Drax may be applied at temperatures varying from room temperature to boiling**
5. **It may be diluted with any proportion of ordinary tap water**
6. **Drax provides evenly distributed, uniform application on entire run of cloth**
7. **Drax is economical and easy to apply. It has excellent "money value."**

Also available is DRAX 1860PMA, a special formulation to provide mildew resistance. DRAX 1860PMA DOES NOT LEACH OUT. Get complete information on these special water-repellent formulas. Write S. C. Johnson & Son, Inc. Do it *now*.

S. C. JOHNSON & SON, INC.
Industrial Wax Division
Dept. TW-73, Racine, Wisconsin

"DRAX is made by the makers of Johnson's Wax"



quantities of rayon for other uses were denied by Mr. Walton. Present high-tenacity rayon plants can turn out about 68,000,000 lb. of high-tenacity rayon for tires in addition to the approximate 100,000,000 lb. already being produced. The proposed increase in production would come primarily from the plants already turning out high-tenacity rayon, and would be effected through changes within those plants.

▼ ▼ ▼

Cancels Cut on "Grade B" Hosiery

OPA cancelled the provision of MPR 339 on June 29 to effect a 25% reduction in the maximum prices of so-called Grade B women's rayon hosiery. OPA said at the same time that meetings with industry representatives would be held in Washington July 8, 9 and 10 to give them the opportunity of reporting their experience with rayon hosiery regulations.

Subjects to be discussed included "the adequacy of standards now in the regulation as shown by the test of actual experience; the advisability of additional grades, or their inadvisability; the relation of present ceiling prices to the operating returns of the industry; the effectiveness of the present differentials between the grades, and whether normal distribution is adequately safeguarded by ceiling prices established for different classes of purchasers."

▼ ▼ ▼

Textile Machinery Out of "Frozen Schedule" Group

In an amendment to Priorities Regulation 18, effective June 23, Order L-215 (which deals with scheduling of textile and allied machinery) was removed from a group of orders under which production schedules may be frozen. A frozen schedule is one whose production sequence of orders cannot be changed without consent of the proper WPB Industry Division.

Eliminating L-215 from PR No. 18 was done at the request of the Textile Machinery Branch, now under the Textile, Clothing and Leather Division of WPB, in order to meet needs of machinery manufacturers. It is believed that manufacturers of this type of machinery will have greater freedom if they are not required to operate under frozen schedules and that the Division will have as much control over production as with the frozen procedure.

CALLAWAY MILLS (LaGrange, Ga., Division) gets the "E" Award: (left to right) R. L. Farrar, male employee with longest continuous service record; Fuller E. Callaway, Jr., president of Callaway Mills; Mrs. Stella Johnson, female employee with longest continuous service record; Lt. Com. Henry H. Heine, U.S.N.R., who presented the pins. Brig. Gen. Allen R. Kimball, commanding the Jeffersonville QM Depot presented the pennant.

OFFICIALS OF THE "TEXTILES GO TO WAR" CELEBRATION, held in Spartanburg, S. C., the last of May, are shown making an inspection of the textiles of the Quartermaster exhibit which was a feature of the celebration. They are (left to right): Walter S. Montgomery, chairman of the celebration steering committee; H. B. Carlisle, Jr., chairman, special events committee; W. G. Jackson, co-chairman of the general celebration committee, and T. N. Hall, co-chairman of the Quartermaster exhibit. Mr. Montgomery is holding a new plastic helmet, Mr. Carlisle, a camouflage jungle uniform, and Mr. Jackson and Mr. Hall, some mosquito netting.

Manufacturers no longer need to report to WPB when adherence to a frozen production schedule prevents filling of orders rated higher than any frozen into their schedules. For example, assume that a frozen schedule which a manufacturer receives from WPB includes a purchase order bearing an AA-5 preference rating. The manufacturer has on his books a purchase order rated AA-4, which is not included in the frozen schedule. If he adheres to the frozen schedule, he will lack either materials or facilities to meet delivery dates specified in the AA-4 order. As a result of the amendment to PR No. 18, the burden of getting an uprating or an amendment to the frozen schedule, in favor of the AA-4 order, is thrown on the customer or the Claimant Agency involved.

Army and Navy expeditors can now request that an order be placed ahead of other orders when it is necessary.

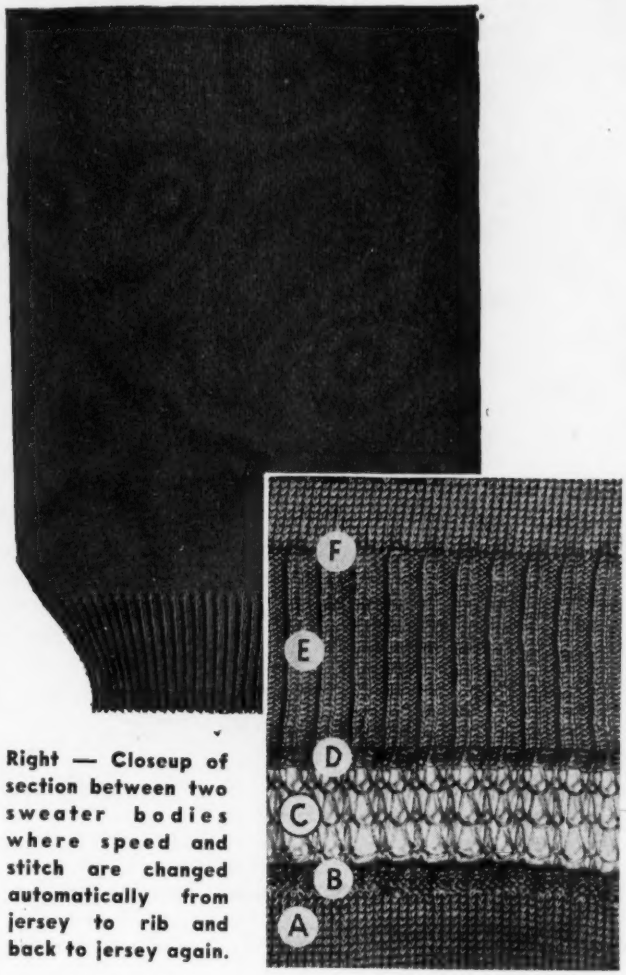
▼ ▼ ▼

Philadelphia Manufacturers Hold Annual Outing

"Keep the youth of this country in high schools and out of the mills," was the advice offered by Col. Hans Christian Adamson, Army Air Forces, explorer and companion of Capt. Eddie Rickenbacker on the raft in the South Pacific, at the 17th annual outing of the Philadelphia Textile Manufacturers Association, held June 25, at Cedarbrook Country Club. According to Col. Adamson, the textile manufacturers can be of great assistance to the Army by hiring only high-school students that have an approved working schedule prepared by the high school authorities. This action will permit the youth to receive regular high-school training in the required mathematical subjects, so necessary for members of the Air Forces, and, at the same time, assist in the production of vitally needed war materials.

A highlight of the outing was the method of complying with OPA gasoline restrictions. C. Marlin Bell, managing director of the association, provided a coach with a team of horses and a coachman to haul the members from the bus line to the country club.

The annual award of the golf championship cup was



Right — Closeup of section between two sweater bodies where speed and stitch are changed automatically from jersey to rib and back to jersey again.

KNITTED OUTERWEAR PRODUCED *WITH* LESS YARN STRAIN

The Leighton principle of operating the horizontal needles from the *outer dial towards the center* reduces the yarn strain. Sharp bends in the yarn are eliminated, making it possible to knit soft spun yarns with less breakage.

The stitches pass down over the *exterior* of the cylinder with the *face* of the fabric in full view. This enables the operator to inspect the quality of knitting at all times—an advantage on plaited fabrics.

Heavy or fine yarns can be knit on the same machine—an outstanding Leighton advantage.

It makes no difference to a Leighton machine whether you're knitting government or civilian goods. Leighton's are constructed to handle both with equal ease, and are built to knit them right.

A—*Jersey stitch*—body of sweater. Speed is automatically reduced before changing to B.

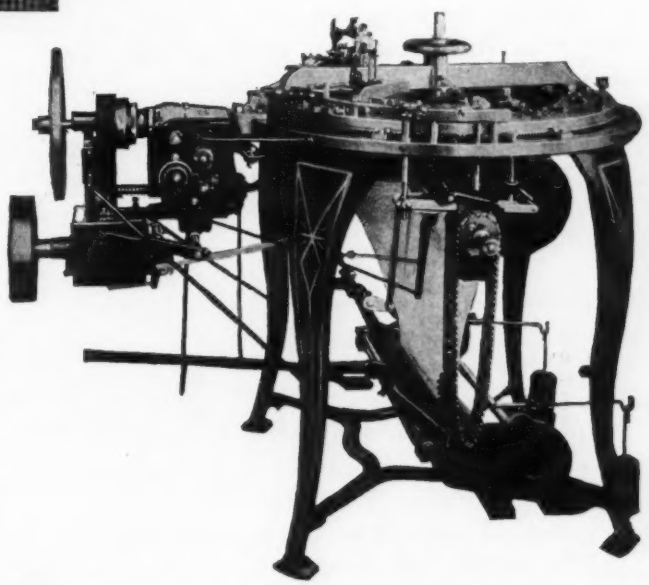
B—*Welt*—the neck piece is sewed on this end after separating stitches (C) are removed.

C—*Separating course on run off.* — Sweaters are separated leaving a clean finished edge without cutting the fabric.

D—*Welt on racked edge*—the bottom or cuff of the sweater.

E—*The rib section*—speed is increased and stitch changed automatically.

F—*Before transfer to jersey stitch,* the speed is reduced and afterwards increased automatically for the body of the sweater.



LEIGHTON MACHINE COMPANY
ESTABLISHED—1873

LEIGHTON

MANCHESTER NEW HAMPSHIRE
INCORPORATED—1894

SATISFYING

How DEVOPAKE hides and covers any surface *in just one coat!*

The master painter is satisfied . . . the maintenance man is satisfied . . . management is satisfied when each sees what an economical and thorough job Devopake does on any interior wall surface . . . and in *one* coat. Economical Devopake steps up efficiency because it improves *seeing* conditions by providing maximum reflection and diffusion of available light.

Look at the advantages of Devopake over ordinary flat wall paints:

Devopake covers more surface per gallon.

Devopake hides solidly . . . in one coat . . . over any type of interior wall surface.

Devopake's big brush workability (or easy application by spray) puts it on quickly, evenly.

Devopake is a self-sealer and finish-coat in one. It eliminates usual undercoat . . . saves man hours.

Devopake's toughness enables it to stand up under hard wear and repeated wash-downs.

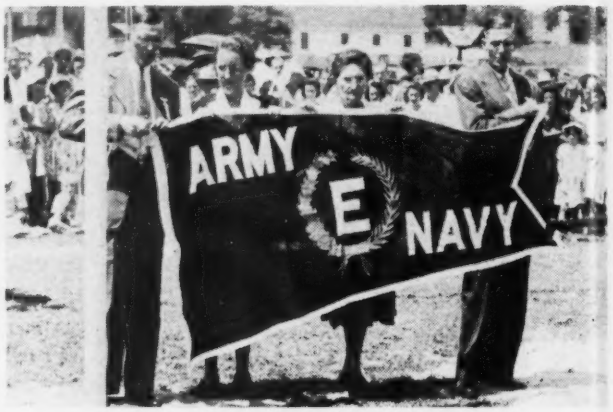
Devopake now comes in 7 practical, ready-mixed colors.

Our strong claims for Devopake are fully substantiated by our customers' experiences. Discover for yourself the many advantages of this outstanding Devoe paint.

DEVOE & RAYNOLDS CO., INC.

The 189th Year of the Oldest Paint Maker in America

FIRST AVENUE AT 44TH STREET, NEW YORK, N. Y.



DIXIE COTTON MILLS, LaGrange, Ga., received the "E" Award on June 22. Col. C. W. Woodward, commanding the Charlotte (N. C.) QM Depot presented the pennant. Above is shown the raising of the flag by four employee representatives who are, left to right, Carl Geter, Mrs. Lucile Partain, Mrs. Annie Turner, and Erroll Woodruff.

made to Thomas A. Crompton, Madison Spinning Co.

Activities for the day were planned and executed by a committee consisting of James J. Diamond, Victor Dye Works; Joseph Schmitz, Jr., Universal Dye Works; William Barstow, No-Mend Hosiery Co.; William Lauker, Onlibest Hosiery Co.; Herbert W. Anderson, Fidelity Machine Co.; Clarence Bertolet, Laurel Soap Co.; E. A. Snape, Jr., Benjamin Booth Co.; and G. A. William, William Bros.

▼ ▼ ▼

Recent "E" Awards to Textile Mills

Awards of the "E" pennant to textile mills made during recent weeks, include:

American Finishing Co., Memphis, Tenn.
Barre Wool Combing Co., South Barre, Mass.
Buckeye Wool Pulling Co., Cincinnati, Ohio.
Kendall Co.—Griswoldville (Mass.) plant, Slatersville (R. I.) plant, and Walpole (Mass.) plant.
Magee Carpet Co., Bloomsburg, Pa.
Piedmont Cotton Mills, Egan, Ga.
Pepperell Mfg. Co.—Fall River (Mass.) plant, Lindale (Ga.) plant, and Opelika (Ala.) plant.
American Viscose Corp., Marcus Hook, Pa.
Dixie Cotton Mills, La Grange, Ga.
Callaway Mills, La Grange (Ga.) Division.
American Thread Co.—Merrick Mill, Holyoke, Mass. and Dalton (Ga.) Mill.
Dunn Woolen Mills, Martinsburg, West Va.
Nashawena Mills, New Bedford, Mass.
Delta Finishing Co., Frankford, Pa.
United States Rubber Co., Shelbyville (S. C.) plant.

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Celanese Answers F.T.C. Complaint

Celanese Corp. of America on June 5 asked for a dismissal of the Federal Trade Commission's complaint against it on the grounds that it has not violated any of the provisions of the Federal Trade Commission Act and that any proceeding by the Government agency in respect to the complaint is not in the public interest.

Celanese Corp. also challenged the constitutional authority of FTC to compel the company to classify its textile products, sold under the registered trademark "Celanese," as "rayon," asserting that Congress has not conferred upon the Commission such authority.

NOW

ALL OUT TO WIN!

THEN—

The war years, with the heavy demands of production, will have taken their toll of all machinery. No doubt you will desire to put your plant in order.

Shelves will be empty and demands for clothing great.

As makers of machinery for the production of Worsted Yarns, on both the English and Continental Systems, we hope to have the pleasure of offering you our services.

PRINCE-SMITH & STELLS LTD.

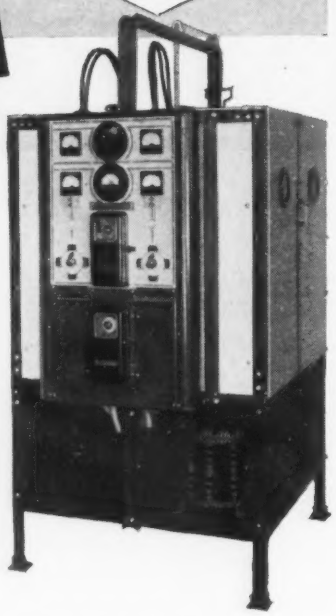
WORSTED MACHINERY MANUFACTURERS

KEIGHLEY (Yorkshire) **ENGLAND**

All in controllable cycles inside the

NEW ATLAS TWIN ARC WEATHER-OMETER

TEST RESULTS TWICE AS FAST



THE new Atlas Twin-Arc Weather-Ometer has been developed to save time where speed in testing is essential.

Where Federal Specifications call for a definite number of testing hours in the Atlas single arc Weather-Ometer, this time can be cut in half in the Atlas Twin-Arc.

Exclusive Atlas Twin-Arc Weather-Ometer features:

1. Temperature control.
2. Unlimited range and control of Light and Water Spray Periods.
3. Adjustable and automatic timing.
4. Insulated test chamber.
5. Operates continuously 24 hours without manual attention.
6. Carbon cost 28c per day.
7. Full automatic — Safe to operate unattended overnight.
8. Control panel contains Volt and Ammeters—Time Meter—Light and Water Cycle switch—Automatic time cut off switch—Voltage adjusting switch—Direct reading thermal regulator—Reactance Coil (cuts power cost in half).

The Single Arc Model is a popular machine where high speed is not required.

Originators and sole manufacturers of accelerated testing devices for a quarter of a century. Fade-Ometer, Weather-Ometer, Launder-Ometer are used all over the world as accepted standard testing machines.

ATLAS ELECTRIC DEVICES CO.
361 W. Superior St., Chicago, Illinois

ATLAS-OMETERS

WEATHER-OMETER ★ LAUNDER-OMETER ★ FADE-OMETER

Fine Rayon Allocated for Export

Effective Aug. 1 producers of fine rayon yarn are required to set aside daily an amount equal to 4% of total spindle output of viscose yarn and 2% of total spindle output of acetate yarn for export. These export quotas are established by Supplement 3 to General Export Order M-148. Other specific quotas may be fixed from time to time by the War Production Board.

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Alleged Textile Saboteur Charged with Changing Gears on Combs

William Luther Hansel, former overseer in the Clara Mills in Gastonia, N. C., has been indicted by a Federal grand jury at Asheville on a charge of obstructing national defense by changing certain gears on combing machines, and is expected to be called to trial in the U. S. District Court in Shelby, N. C., at the September term. This is said to be the first sabotage case to "break" in central North Carolina since the start of the war, and may be the first in the textile industry.

Investigation of Hansel by the FBI followed complaints that the overseer was out of harmony with the war effort; that he had refused to join in the War Bond buying program, and had frequently spoken in a disparaging tone of America at war and the armed forces, and had displayed generally an anti-American attitude. FBI agents said the Government had evidence that the gear changing took place during Hansel's final hours as superintendent. He had been discharged and was working his last day when the charges were made, the district attorney said.

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WPB Allocates Materials for Underwear

The War Production Board has initiated a special program to provide yarn and other materials needed for specified types of men's and women's winter weight and infants' and children's knit underwear which are needed to supply essential civilian requirements. Under this program, consideration will be given to PD-1A applications from knit underwear manufacturers, covering supplies of yarn no finer than 30s single carded, woven lining, facing fabrics, tapes and sewing thread for the period from July 1 to Sept. 30, 1943, for physical incorporation into specified types of underwear regarded as essential for civilian needs.

▼ ▼ ▼

This and That

Neoprene synthetic rubber, in form of cut threads, is now being employed experimentally in manufacture of elastic webbing, hosiery, and other products, according to recent trade reports. Companies making this type of cut thread are said to include Carr Mfg. Co., Bristol, R. I., and Easthampton (Mass.) Rubber Thread Co.

Announcement was made last month that Ford Motor Co. has discontinued the manufacture of synthetic fibers from soy beans. Unconfirmed reports are that another company is negotiating with Ford to take over the soy bean fiber project. Robert A. Boyer, who was in charge of Ford's research on soy bean fibers, resigned on July 1.

Relative to the report that 40,000 bales of cotton are being sold in Texas for movement to Spain, the Department of Commerce representative in Dallas, said it was

DODGE GROUP DRIVES BOOST *Battle Power*

"SHARE-THE-RIDE" Principle in POWER TRANSMISSION

Modern Dodge Group Drive applies share-the-ride principles to horsepower delivery. Taken from its source, capacity power, over short power "roadbeds," is delivered enroute to a group of production machines. Group drive permits one motor to do the work of several (a *powerful* advantage in these war days when conservation of materials and manpower is so vital).

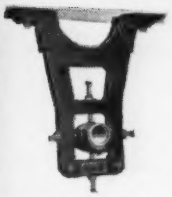
Dodge Group Drive puts all the power in the job . . . boosts battle power, hastens Victory! By reducing connected horsepower, conservation is assured in motors, wiring, controls and other critical equipment and materials. Initial cost is low . . . fixed charges and maintenance costs are reduced. Cost of horsepower-delivery drops.

In the complete Dodge line are all the component parts for group drive . . . shaftings, hangers, pulleys, bearings, clutches . . . as well as individual motor drives, including D-V Matched Quality V-Belt Drives.

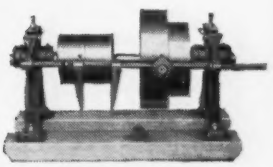
Contact nearest Dodge Distributor or write

DODGE MANUFACTURING CORPORATION, Mishawaka, Indiana, U.S.A.

DODGE SHAFT HANGERS



Shown here is the Dodge 4-point Pressed Steel Drop Hanger which may also be used as a Post or Bracket Hanger. 2-point and 4-point Iron Hangers also available.



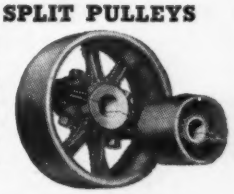
DODGE COUNTERSHAFTS

Can be supplied to meet any specifications with the proper type of hangers, bearings, pulleys and clutches to meet any requirement.

DODGE-TIMKEN Hanger Bearings

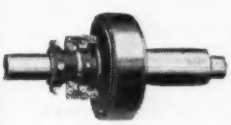
A completely assembled, factory adjusted, pre-lubricated unit delivered ready to install. Effectively sealed against admission of dirt or loss of lubricant.

DODGE STEEL SPLIT PULLEYS



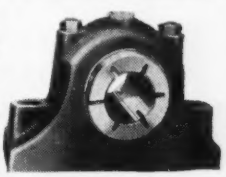
Strong, rugged, light in weight. Easy to erect. Grooveless oval crown permits low belt tension—saves power. Also wood and iron pulleys for every service.

DODGE FRICTION CLUTCHES



The Dodge Solid Friction Clutch shown here is particularly adapted for modern group drives and general power transmission service. Other types and sizes up to 1000 HP. at 100 R.P.M.

DODGE-TIMKEN PILLOW BLOCKS



For power transmission or machinery applications. Completely assembled, factory adjusted, pre-lubricated; seals exclude dust and dirt and retain lubricant. Easy to install. Long life (30,000 hours of service under conditions for which they are adapted) . . . (good for 50 million revolutions without re-lubrication, under normal conditions).

DODGE VICTORY WOOD SPLIT PULLEYS

Great tractive pull . . . long belt life . . . power saving. Balanced. Interchangeable bushings (for various sizes of shafts). Compression fastening to shaft. Easy to install. Light weight. They conserve metal!

Dodge VICTORY Wood Split Pulleys on a double reduction drive.

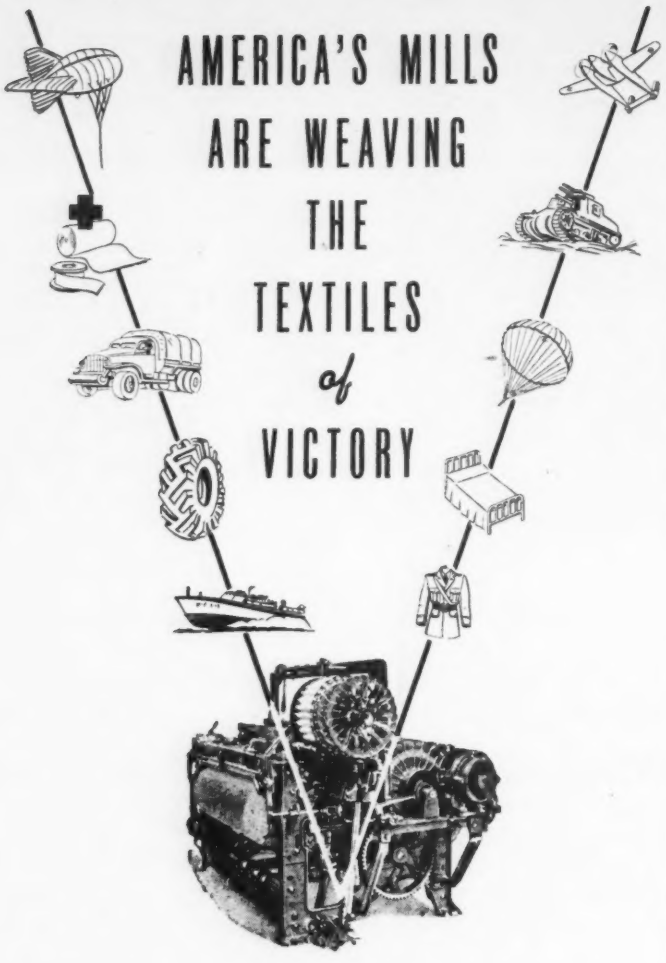
DODGE

MISHAWAKA

THROW ALL YOUR SCRAP INTO THE FIGHT! BUY MORE WAR BONDS!

THE RIGHT DRIVE FOR EVERY JOB

PUT *ALL* YOUR POWER IN THE JOB



MORE than 300 pounds for every man in the Services! That's the staggering amount of textiles being supplied to our armed forces right now.

Clothing, of course, makes up part of that poundage—but only part. For there is scarcely a piece of equipment made that does not use textiles somewhere in its construction. From lifeboats to army jeeps, from tanks to planes, from parachutes to camouflage—textiles are on active duty.

Burkart-Schier is helping to make possible the production record being set by the textile industry — the mile after mile of needed fabrics which are speeding off America's looms. Burk-Schier chemists and textile chemicals are working right along with the textile industry, helping to process all sorts of military fabrics, giving fabrics necessary characteristics, making fabrics fit to fight!

BURK-SCHIER

BURKART-SCHIER CHEMICAL CO.

Manufacturing Chemists for the Textile Industry

CHATTANOOGA, TENNESSEE

PENETRANTS • DETERGENTS • SOFTENERS • REPELLENTS • FINISHES

TEXTILE CALENDAR

Exposition of Chemical Industries, New York, Dec. 6 to 11, 1943.

not known whether Spain would be in the market for any of the 1943 staple. Strict low and low middling were the principal grades taken from previous crops.

It is estimated by the National Knitted Outerwear Association that 90% of the knitted glove production of the industry is going to fill Government orders.

▼ ▼ ▼

Textile Trading Slow Through June

Cotton goods trading was slow during recent weeks, as sellers were loath to commit themselves ahead at profitless prices. Scarcity of manpower is holding back production to a point where only Government orders and high-priority business gets much attention. Particular constructions are unavailable and civilian buyers must take the best that they can get. Production will not catch up with demand for many months on the present outlook.

Wool goods men have been freed from the always-onerous blending regulations on civilian wool allotments by WPB, but this fact does not mean that civilians will have any greatly increased yardage of apparel fabrics available. Actually that yardage may dwindle, as war orders and Lend-Lease take substantial quantities, and, due to manpower shortage, the margin of production available for civilian use may not even take up all the wool allotted to it. Notable is the announced delay of 90 days by the American Woolen Co. in delivering its fall worsteds because of the pressure of Government business.

Rayon: Scarcity continues the feature of this branch of the market, but distributors are trying to adapt themselves to conditions as they find them. Government sources say that because of the increase in rayon production, war orders can be taken care of and enough poundage left to give civilians as much as they had in 1939—just four years ago. Rayon lining fabrics are particularly scarce. Special attention to this fabric division is being given in Washington.

Hosiery sellers have been relieved by OPA's cancellation of the automatic 25% price cut in Type B hosiery under original provisions of MPR-339, the rayon hosiery schedule. Hearings before the Boren Committee in Washington during June had brought into the open the widespread dissatisfaction relating to that order, but, beyond the cancellation of the price cut, little had been done up to time of going to press to relieve the trade of the other troublesome features. Half-hose styles continue to be reduced, and at recent openings for fall the reduction in number of patterns ranged from 20 to 65%.

Underwear distributors continue to face a marked shortage of most lines, and recent offerings of allotments by manufacturers were actively taken up. The situation faced by knitters has been recognized by WPB, and regulations aiding the mills in obtaining necessary yarns and trimmings have been announced.

Outerwear mills remain nervous over their yarn supplies despite the easing of the wool-blending regulations which should give them a freer supply of all-wool yarns. The industry is watching the Washington situation closely and is meeting possible restrictive orders in advance. Production is fully under order.

RAYON REPORTS

Presented Monthly by American Viscose Corporation, New York, N. Y. JULY, 1943

RAYON HELPS BLAST AN INVASION PATH

Dispatches from the Tunisian and Mediterranean fronts are bringing satisfaction to rayon producers. They tell of German troops being demoralized and driven to surrender by the Allies' use of fragmentation bombs. The softening up of Pantelleria was accomplished partly by this low-level bombing technique. Large numbers of these morale-busters were dropped by parachute from light and medium bombers flying as low as twenty feet above the ground.

A hazard to plane and crew would exist in this type of bombing if parachutes were not used. Because of the low altitude, a

bomb would explode so soon after release that the plane would not be able to get out from over the target and away from the area affected by the explosion. Rayon parachutes, attached to the bombs, delay their descent for the necessary fraction of time. As a result, both plane and crew are safely away by the time their high-powered eggs have hatched.

Of course, this represents only one of the uses for rayon parachutes. And it's only one example of the vital role that Rayon is playing on every battle front.

MORALE BUILDERS FOR EMPLOYEES

American Viscose has embarked upon a program to keep the morale of its employees at a high level. A series of Family-Night-Open-House parties has been staged at Marcus Hook, Front Royal, and Lewistown. A typical evening of entertainment features a show put on by the employees themselves, a talk by a returning war hero, singing, awards to deserving workers, demonstrations by a First Aid Crew, voice recordings to be sent to relatives and friends in the armed forces. Displays of 'rayon at war' and a large diorama depicting the Guadalcanal battle front help workers to obtain a more realistic picture of the important work they are doing.

Five hundred A.V.C. families and guests attended the first 'Open House' held at Marcus Hook; 3661 was the count at the last party given in Front Royal.

This holding-up of the A.V.C. diary is purely for the benefit of those who might be interested in arranging similar morale-builders for their family of employees.

HOPE FOR FIGHTING ALLIES

One of the most heroic pages of this war is being written by General Mikhailovitch and his gallant Yugoslav patriots. Their great courage and fighting spirit have helped immeasurably to dissipate the striking force of the Axis. Keeping these and other guerrilla armies equipped and in the fight has been another job for rayon. Every day, rayon supply parachutes drop guns, ammunition, radio sets, medical equipment and other supplies to these isolated Allies.

For these supply 'chutes, Rayon yarn has been 'specially engineered to make a cloth that will withstand the sudden shock of the load as the 'chute snaps open.

ROCK-A-BYE, BUDDY

Jungle hammocks are helping members of the armed forces to sleep peacefully in the tropics. The protective canopies of these hammocks are kept taut by loops of Vinyon** cord sewn to strongly reinforced spots at each end of the canopy. Whereas a rope loop might break when a heavy man causes the canopy to stretch, the loop of Vinyon has an elongation of 300% at the breaking point. Aside from its great elasticity, Vinyon is more highly resistant than rubber to sunlight, oxidation, oils and acids. It offers tremendous possibilities to the textile trade, when peace comes.

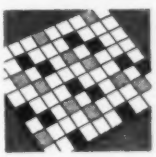
**T. M.—C. & C. C. C.

Copr. 1943—American Viscose Corp

HERE'S WHAT 4-PLY SERVICE BRINGS TO YOU

1 PRODUCT RESEARCH
Helps you to get the right yarns.

2 FABRIC DEVELOPMENT
Helps you design new fabrics.



3 TEXTILE UNIT
Helps solve production and finishing problems.

4 "CROWN" TESTED
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

Producers of CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: 350 Fifth Ave., New York City; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

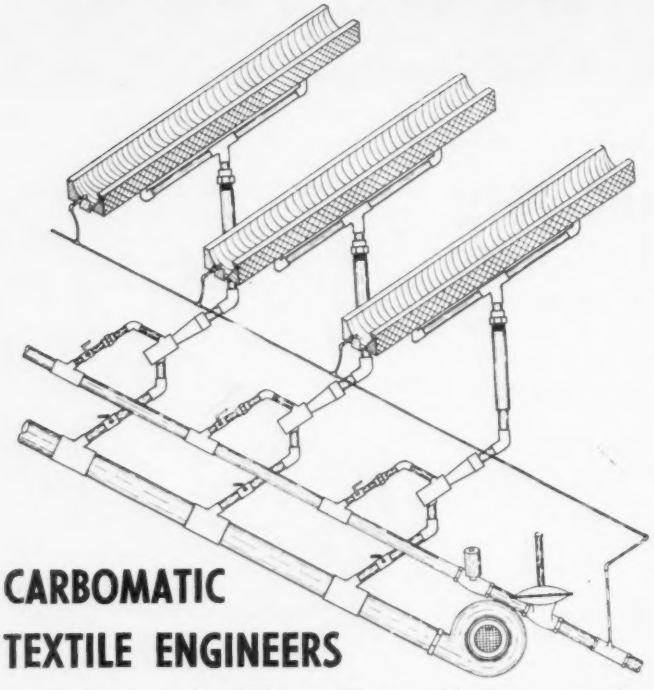
Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

*T. M. Reg. U. S. Pat. Off.

WAR PROBLEMS

What are yours?

Too little? Too late?



CARBOMATIC TEXTILE ENGINEERS

can help you with this wartime production gremlin:

DRYING: Spun or flat rayon, acetates, cotton or wool materials, CARBOMATICally dried, retain desirable "hand" or finish with complete uniformity and at greater speed.

SINGEING: Entirely automatic, rapidly attached CARBOMATIC generators increase output with remarkable economies in manpower and fuel cost.

CURING: Guaranteed satisfaction in terms of desired finish and actual production quotas in the polymerization of synthetic resin finishes and pigment dyes. Unpleasant urea formaldehyde odors eliminated.

In these processes as well as in carbonizing and sanforizing CARBOMATIC PERFORMANCE offers to the textile industry ten noteworthy ADVANTAGES:

Uninterrupted, uniform delivery of heat.

High quality drying or finish . . . "hot spots" and "dead spots" eliminated.

Completely automatic operation.

Safety . . . designed to meet stringent insurance demands.

Flexibility . . . individual generators turned on or off as required.

High ratio of turndown . . . ascending or descending temperature zones possible.

Negligible maintenance cost . . . no fuel loss in heating-up period.

Quantity of heat supplied in proportion to changing production needs.

Drying, curing, and singeing speeds greatly increased.

Mellow hand assured.

Bulletin T-8 gives complete information whether you use gas or electricity.

OUR ENGINEERS ARE AT YOUR SERVICE.

INFRA-RED DIVISION

CARBOMATIC CORPORATION

ENGINEERS AND MFGRS. OF RADIANT HEAT BURNER EQUIPMENT

GENERAL MOTORS BUILDING, 1775 Broadway, New York, N.Y.

Also H. W. Butterworth & Sons Co., Philadelphia, Pa.
Offices in Providence, R. I., and Charlotte, N. C.

NEWS ABOUT MEN

Earle R. Stall, of Greenville, S. C., has been elected president of Florence Mills, which operates plants at Forest City, N. C. and the American Spinning Division at Greenville. He succeeds **Allen F. Johnson,** president of Florence Mills since 1935, who becomes chairman of the board. Mr. Stall is also president of the F. W. Poe Mfg. Co. and will retain his position there. **Earle Stall** was well known as manager of the textile machinery department of J. E. Sirrine & Co., engineers and entered the textile operating field in 1931 as southern representative for Woodward, Baldwin & Co. of New York City. He became president of F. W. Poe Mfg. Co. in 1935, and is also a director of the Poe mill and on the boards of five other mills. Mr. Johnson has had responsible connections with West Point Mfg. Co., Callaway Mills, and Exposition Cotton Mills. Later he was with Consolidated Textile Corp. as vice-president in charge of operations. For the last eight years he has been president and secretary of the Florence Mills, during which period the mills were modernized.

ALLEN F. JOHNSON, now chairman of board of Florence Mills.

EARLE R. STALL, elected president of Florence Mills.

John H. Lacouture, president and treasurer of the Guerin Mills, Inc., Woonsocket, R. I., has been elected president of the Woonsocket Manufacturers Association for his seventh term. He has held the position since the organization was formed.

F. W. Symmes, of Greenville, S. C., president of Union-Buffalo Mills, was elected a director of Santee Cotton Mills, Orangeburg, S. C., June 4.

Joseph Emory Sirrine, head of J. E. Sirrine & Co., Greenville, S. C., textile and industrial engineering firm, and an official of textile mills, has had the degree of doctor of laws conferred upon him by Furman University, from which he was graduated in 1890.

Richard S. Cox, who had been assistant director and assistant dean at Philadelphia Textile Institute for over 20 years has been appointed dean of the Institute succeeding **Earl Heard,** who resigned, as reported last month, to join the West Point Mfg. Co. Mr. Cox founded the color and jacquard department of the school.

Jack B. Glasner has been elected president of Rockford (Ill.) Mitten & Hosiery Co. to succeed the late Frank Boehmen. Mr. Glasner was previously treasurer and general manager, and has been with the firm since 1928. **J. H. Ederstrom** has been elected secretary and treasurer.

William H. Ziock, Sr., has been elected president of B.Z.B. Knitting Co., Rockford, Ill., to succeed the late Frank Boehman.

Willard F. Staples, formerly associated with Cabot Mfg. Co., has been elected vice-president of Esmond (R.I.) Mills. He will have charge of manufacturing.

Andrew J. Sokol, recently assistant treasurer and in charge of executive merchandising for the downtown division of Cohn-Hall-Marx Co., has become associated in an executive capacity with J. P. Stevens & Co., New York.

M. Bernard Morgan, plant engineer of American Viscose Corp., Meadville, Pa., has been promoted to an administrative

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Recognition

PROCTOR DRYERS ARE RECOGNIZED BY LEADING MANUFACTURERS OF TOWELING

Just as she *recognizes* extra quality and texture in her lovely bath towels, so leading toweling manufacturers *recognize* the extra quality built into Proctor Drying Machinery. For correct uniform drying results, at a minimum cost, Proctor Dryers are the first choice of leading manufacturers of toweling. In every major industry where drying is an operation, there *is* a Proctor Dryer scientifically designed and custom built to do the job right. Whether it be for textiles, pharmaceuticals, synthetic rubber, chemicals, food, veneer or soap, leading manufacturers rely on Proctor Drying Machines to do the job *right.*

PROCTOR & SCHWARTZ • Inc.
PHILADELPHIA, PA.

PROCTOR AUTOMATIC LOOP DRYER for quick, uniform drying of dyed or finished piece goods. The cloth, formed into loops over conveyor girts, is carried through the dryer while heated air, circulated at high velocity by fans of PROCTOR design, is directed down into each loop.

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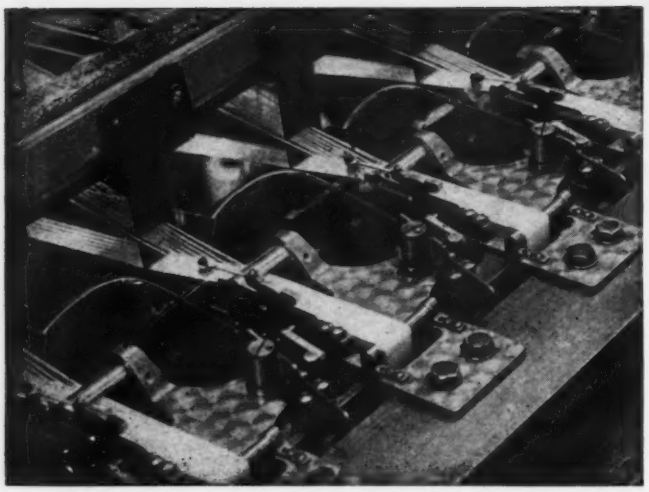


Change with the Times

CLUTSOM HIGHSPEED SHUTTLELESS LOOM

We are still planning for War but many executives are planning ahead for Peace too.

Vast production of narrow fabrics will be needed after the war and the trade will go to those mills best equipped. It is time to consider weaving in the modern way, time to discard the old, time to think in terms of speed and high production at lower cost. Time to change with the Times.

Why not let us give you a demonstration of weaving in the modern way—those old type looms must be wearing out under the wartime beating they are taking.

CLUTSOM MACHINES INC.

205 EAST 42 STREET NEW YORK

Telephone MUrray Hill 4-2327

FACTORY: Springdale, Connecticut

NEWS ABOUT MEN

post in the engineering department at the corporation's main office in Wilmington, Del. **Hugh Miller,** assistant plant engineer at Meadville, succeeds Mr. Morgan.

Scott Russell, president of Bibb Mfg. Co., Macon, Ga., was one of the participants in the American Forum of the Air, feature program of the Mutual Broadcasting System, on Sunday, June 20. The subject of the forum on the evening Mr. Russell participated was "Methods of Taking Profiteering Out of the War."

John A. Levering, son of the late J. W. Levering who was co-founder of Eavenson & Levering Co., Camden, N. J., has been elected president of the company, succeeding Frank D. Levering, who died recently. He has been with the company for 22 years, and treasurer for the last 12 years.

F. Coit Johnson has been named chairman of the board, and **E. E. Mensel** president of the Hampton Co., Easthampton, Mass.

John P. Maguire, head of John P. Maguire & Co., retiring director of the regional office of WPB in New York, was tendered a dinner on June 24 by his friends in recognition of his outstanding services in the WPB post.

Walter S. MacPhail has been appointed general superintendent in charge of manufacturing at Wamsutta Mills, New Bedford, Mass., succeeding the late James Metcalfe.

Arthur E. Moreau, organizer and president of Amoskeag Industries, Inc., Manchester, N. H., has been appointed chairman of a State Council on Post-War Planning and Rehabilitation.

Frank J. Knell was recently reelected president of the Wool Associates of New York Cotton Exchange. **Bernard J. Conlin** was reelected as first vice-president, **Stanley H. Lawton** as second vice-president and **William J. Jung** as treasurer.

W. F. Staples, formerly general manager of Cabot Mfg. Co., Brunswick, Me., has been elected vice-president in charge of manufacturing at Esmond (R.I.) Mills.

Frank H. Griffin, vice-president and technical director of the American Viscose Corp., having completed 25 years of service with the company, was honored May 25 at a luncheon given at Wilmington, Del.

Wilbert J. Carter, of Greensboro, N. C., president of Carter Fabrics Corp., received the degree of Doctor of Textile Science at the recent commencement of North Carolina State College, at Raleigh.

Dean Harvey, materials engineer of Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., was elected president of American Society for Testing Materials, Philadelphia, at the annual meeting in Pittsburgh June 30. He is also chairman of D-13's Subcommittee on Glass Textiles.

S. J. Milligan, assistant general sales manager, Dominion Textile Co., Ltd., Montreal, Canada, for the last five years, has become general sales manager to succeed the late J. G.

COTTON-TEXTILE MERCHANTS: 1918–1943

Above: Bertram Borden, first president of association. At right: W. Ray Bell, present president.

June 17, 1943 marked the silver anniversary of the Assn. of Cotton Textile Merchants of New York—25 years of constructive accomplishment in the merchandising of the industry's cotton products.

GREAT NAMES in American Progress

ROBERT FULTON, BOAT BUILDER — On a fateful Friday in 1807, a skeptical crowd gathered at the foot of Cortlandt Street, New York. They came to watch "Fulton's Folly" attempt the "impossible" by traveling without sails from New York to Albany. Those who came to jeer stayed to cheer. "Crazy" Bob's puffing, snorting Clermont wheezed away from the jetty and grunted upstream against the wind at the miraculous speed of four miles an hour. On that day, Robert Fulton, well-nigh penniless dreamer, revolutionized the water-borne transportation of the world.

AMERICAN BLOWER

American Blower products have contributed much towards the progress of American industry — progress that today is making it possible for America's vital industries to outproduce the world. In the great public utilities, the steel industry, in the manufacture of petroleum products, chemicals, in food processing, mining, smelting and refining, in hospitals, schools, public buildings and homes, American Blower air handling equipment has kept pace with progress.

Utility Set

We're working 100% for victory. But you can still buy American Blower products for vital war work.

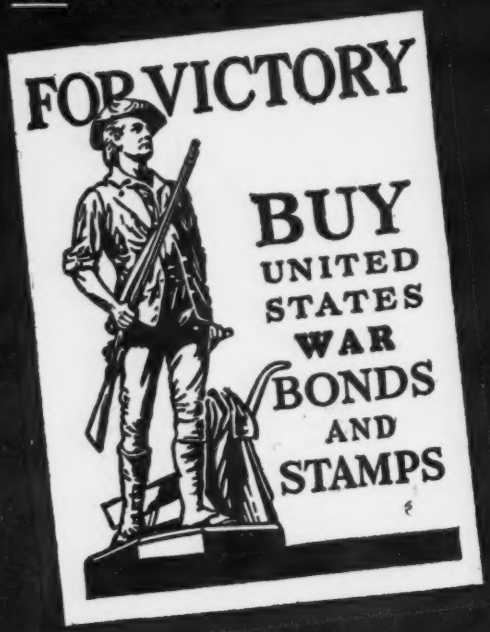
After victory we'll be ready with the most complete line of heating, ventilating and air handling equipment in history.

ARMY (E) NAVY

For excellence in production

AMERICAN BLOWER CORPORATION, DETROIT, MICHIGAN
CANADIAN SIROCCO COMPANY, LTD., WINDSOR, ONTARIO
Division of AMERICAN Radiator and Standard Sanitary Corporation

"Remember, Our Boys Give Their Lives . . .
You Lend Your Money!"



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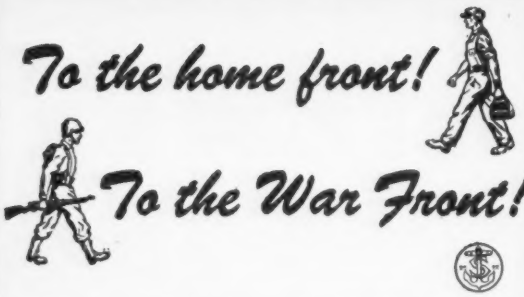
Suppliers of
LIQUID
CHLORINE



SOLVAY SALES CORPORATION
Alkalies and Chemical Products Manufactured by The Solvay Process Company
40 RECTOR STREET NEW YORK, N. Y.

BRANCH SALES OFFICES:
Boston • Charlotte • Chicago • Cincinnati
Cleveland • Detroit • New Orleans • New York
Philadelphia • Pittsburgh • St. Louis • Syracuse

NEWS ABOUT MEN

Dodd, who held that office for 34 years.

Walter Mansfield, of Boston office of Celanese Corp. of America, has been elected president of New England Rayon & Synthetic Yarns Peddlers Association for the coming year.

Roy A. Jenkins was elected president of Southern New England Textile Club at meeting at Pawtucket (R. I.) Country Club June 18.

David Ballou, who has been with Franklin Process Co., Providence, R. I. for the last 13 years, is now associated with the textile division of U. S. Rubber Co., New York.

Calvin H. Hartzell, a director and superintendent of Kraemer Hosiery Co., Nazareth, Pa., celebrated the 50th anniversary of his association with that company last month.

Leonard Kuvin has been appointed director of the newly-formed division of economic research of Tubize Chatillon Corp., New York.

J. Bruce McCullough, production and sales representative of Avondale Mills, Sylacauga, Ala., has been appointed chief of the combed yarn unit of the cotton branch of WPB.

Fred M. Blanchard, president of Fred M. Blanchard, Inc., Boston, was guest of honor on June 11 at the Copley Plaza Hotel, where about 200 friends in the wool industry and other fields gathered to commemorate his 50 years of service in brokerage activities. **Leo, Ivan** and **Frederick Hart,** associates in the Blanchard organization, were hosts. Mr. Blanchard entered the business in 1893 as an employee of Dewey, Gould & Co., Boston, and in 1905 established his own organization, specializing in foreign accounts. He is a director of the National Wool Trade Association.

T. D. Johnson, vice-president of Alabama Power Co., Birmingham, Ala., and head of the industrial development department, has resigned to become an executive of Vanity Fair Mills, Inc., Reading, Pa.

Glenn M. Chandler, of Toledo, O., has become general manager of the Empire Knitting Mills, Statesville, N. C., succeeding **F. S. Hulse.**

John S. Hoyle is succeeding **Walter Scott** as superintendent of Stafford Worsted Co., Stafford Springs, Conn. Mr. Hoyle was with Premier Worsted Co., Woonsocket, for 12 years. Mr. Scott retired after 27 years as superintendent.

MARSHALL DILLING

Marshall Dilling, after 50 years of active connection with the textile industry, for the last 26 years of which he was superintendent of A. M. Smyre Mfg. Co., Gastonia, N. C., has retired in an effort to regain failing health. Mr. Dilling joined A. M. Smyre Mfg. Co. in 1917. Several years ago he was also made secretary of the corporation. He was one of the founders of the Southern Textile Association, served as its president for one term, and has been executive secretary for the last 30 years. In 1934 he was awarded a gold medal by the association for distinguished service. In 1928 he was awarded the S. B. Alexander medal for cutstanding service to the textile industry, one of only two such awards so far made.

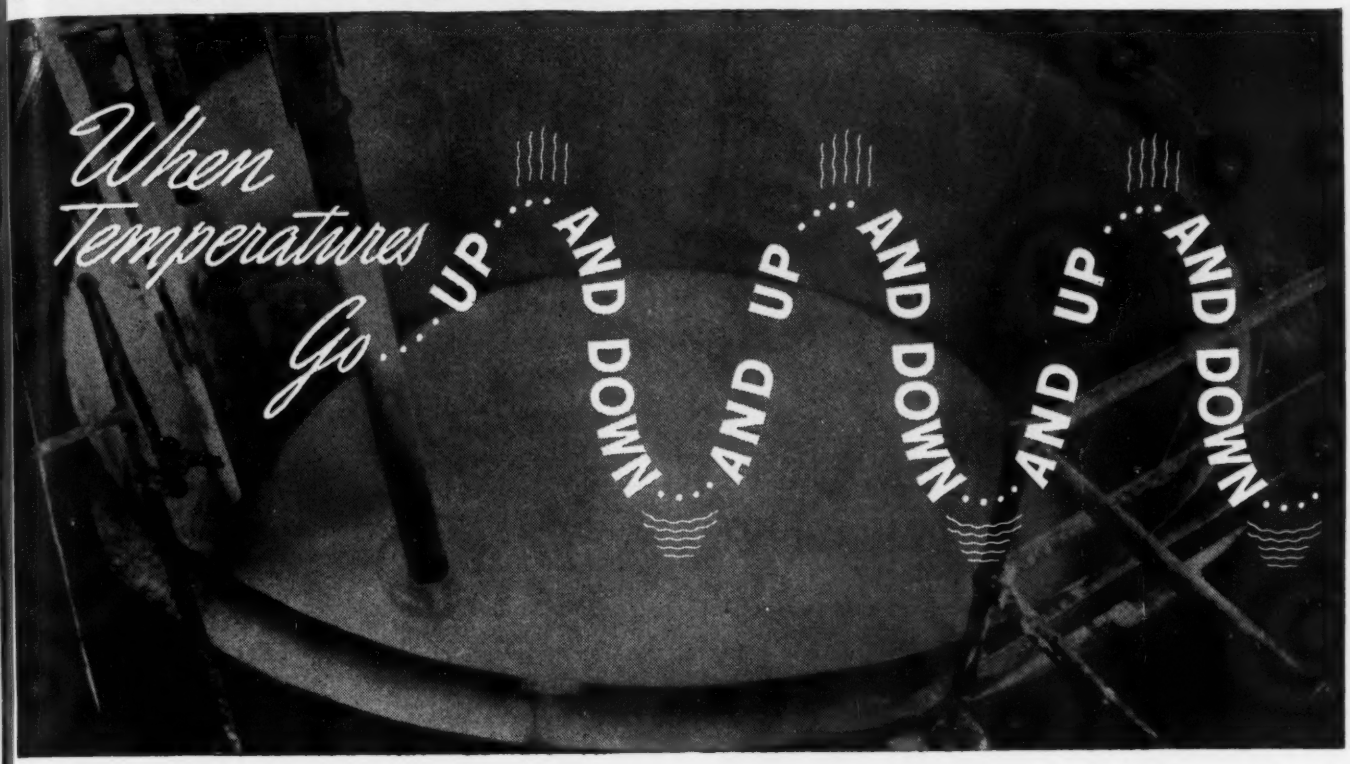
L. Crawford Easter, who has been with Burlington Mills Corp. for the last six years, has been named superintendent of the Lexington (N. C.) Silk Mill. He succeeds **James M. Rennie,** who has just been sworn in as a lieutenant (j.g.) in the Naval Reserve.

French Campbell, formerly manager Marilyn Mills, Anniston, Ala., became manager of Carter Mills, Lincolnton, N. C., on June 1.

Dr. Alfred R. Macormac, professor of textile chemistry at Alabama Polytechnic Institute, Auburn, Ala., has been given leave of absence for the duration to accept the position of Associate Textile Technologist at Jeffersonville (Ind.) Quartermaster Depot.

W. P. Hamrick, former general superintendent of Pacific Mills, Columbia, S. C., has resigned as director of the OPA rent-control office in Columbia.

Walter D. Richards is now associated with the Enterprise Dye Works, Inc., of Woonsocket, R. I. He was 26 years



TODAY, acids have a bigger job of work to do than ever before—helping industry turn out munitions, oils, metals, chemicals, fertilizers, textiles in a steady flow.

Shutdowns are critical. Everything possible must be done to prevent the breakdown of acid handling equipment.

* * *

High among causes of shutdowns in many acid processes are the repeated, drastic temperature changes to which tanks used to heat and cool acid solutions are subjected.

The continuous expansion and contraction, with its accompanying movement or working of the lining, is severe service for any material to withstand.

* * *

Tellurium Lead has been found by certain users to perform better than other types of lead under conditions where repeated and abrupt temperature changes occur. It is thought that this may be due, among other things, to Tellurium Lead's *work-hardening* property. As this lead is worked, it is toughened—increased in tensile strength.

The work-hardening property of Tellurium Lead is also a safeguard wherever lead must be bent, stretched or hammered as in elbows, flanges, coils, joints and turnover points.

* * *

Another source of acid equipment trouble is vibration. The resultant dynamic or fatigue stresses, acting in combination with corrosion, are more disastrous than either factor alone.

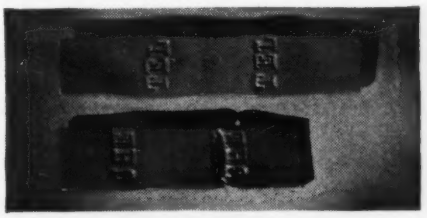
To meet this condition, Tellurium Lead not only has all the acid corrosion resistance for which lead is noted but, under vibration tests, it exhibits a 60% greater endurance limit than lead without the tellurium addition.

* * *

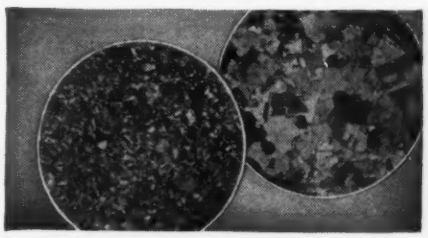
Undoubtedly, another factor in Tellurium Lead's resistance to corrosion under severe conditions of heat and stress is its finer, more uniform grain structure, shown in the accompanying photomicrographs. The surface of Tellurium Lead sheet and pipe is smoother—there is less possibility of pitting and local corrosion.

Tellurium Lead of our manufacture is time-tested St. Joe chemical lead alloyed with a small quantity of tellurium. It is available in sheet or pipe form, or fabricated in coils for heating and cooling purposes.

For further information address the nearest Company branch listed below.



It *work-hardens:* These strips of Tellurium Lead (top) and regular lead (bottom) were stamped and pulled out in a tensile testing machine. Note how Tellurium Lead was strengthened by the stamping, whereas the other lead was weakened—and fractured.



Note Finer Grain Structure: Photomicrographs of Tellurium Lead (left) and ordinary lead (right), showing the finer, more uniform grain formation brought about by the addition of tellurium. Another significant point: In laboratory tests extruded strips of Tellurium Lead, annealed at 150°C for six months, showed no grain enlargement. Metallurgists agree that freedom from grain growth means less danger of rapid corrosion at elevated temperatures.

USERS "TELL" RESULTS

"We used your Tellurium Lead sheet to line an acid-cutting tank. Strong sulphuric acid is dumped into the tank and sufficient water added to bring it to the proper strength. This naturally generates considerable heat. The operation has been repeated daily for nearly three years. To date no leakage or other difficulty has been experienced. The lining is as good as the day installed."

* * *

"Tellurium Lead sheet was used to replace a tank lining which had been in service about three years. The old lining had bulged to such an extent that it rendered the tank useless. The Tellurium Lead lining has now been in service about two years. No bulging has occurred. The lead still conforms to the tank shape as snugly as it did on installation."

* * *

"We have just checked up on the condition of the 3-year old Tellurium Lead lining in our large sulphuric acid mixing tank. We found the lead to be very smooth and uniform with no signs whatever of buckling although the tank is used for cutting raw acid to low specific gravities. Comparison with other tanks in the same room and used for identical purposes shows that Tellurium Lead makes an ideal lining. The other linings have given us trouble by buckling and cracking open along the welded joints."

TELLURIUM LEAD

NATIONAL LEAD COMPANY—New York, Baltimore, Buffalo, Chicago, Cleveland, Cincinnati, St. Louis, National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co. of Penna., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis; Master Metals, Inc., Cleveland; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

Spinning Frames or Radiators?

Every active spinning frame is a radiator. The more and the faster it produces, the more heat it radiates. At times, this heat may equal that of a 10-branch steam pipe coil.

Modern textile machinery creates its own manufacturing handicap, on the one hand, and begs for the cure on the other.

With Certified Climate, anticipated production is not a disappointment, and installations pay for themselves sometimes in a year or less.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

NEWS ABOUT MEN

with Montrose Mill of Guerin Mills, Woonsocket.

Frank W. Jeffers, formerly associated with the New York office of the Lorraine Mfg. Co., has been appointed assistant to President Norman A. MacColl at Providence, R. I.

Guy B. Arthur, personnel director of American Thread Co., Willimantic, Conn., has organized a new public and industrial relations department.

Helen Harrington Boyd has joined the American Wool Council as associate director to develop a program of education directed to the retail consumer. For the last five years Miss Boyd was company analyst for Talon Inc., and prior to that for four years in charge of press publicity for R. H. Macy & Co.

Robert O. Huffman, Morganton, N. C., president of the Drexel Hosiery Mills Co., and also directing head of the Morganton, Huffman and Garrou hosiery mills, was on June 16 named chief of the men's hosiery unit, knit goods branch of WPB.

Warren F. Cooper, Sr., service engineer for Tennessee Eastman Corp., Johnson City, Tenn., since 1931, has been appointed chief of the Synthetic Fiber Section of WPB.

J. L. Rhinehardt has become general overseer of spinning, spooling, twisting, warping and winding at Chronicle Mills, Belmont, N. C.

Nathan Dearman has become superintendent of spinning, warping and winding at Samoset Mills, Talladega, Ala.

J. B. Meacham, who is manager of Insulating Yarn Co., Charlotte, N. C., has become superintendent and manager of Balston Yarn Mills, Inc., Lincolnton, N. C., also. His son, **Henry C. Meacham,** will be assistant manager of Insulating Yarn Co.

W. H. McGaha, formerly head of the weaving department of Riverside & Dan River Cotton Mills, Danville, Va., has become superintendent of weaving, slashing and drawing-in at Entwistle Mills, No. 1 unit, Rockingham, N. C.

C. C. Brooks has become general superintendent of spinning of Magnolia (Miss.) Textiles, Inc., succeeding **Willie Parker,** resigned.

C. M. Moore, superintendent of J. & C. Yarn Mill, Ellijay, Ga., has resigned to become superintendent of Tifton (Ga.) Cotton Mills, succeeding **J. W. Hames,** who has retired and moved to Shelbyville, Tenn.

Mary C. Tucker, advertising and promotion manager of Roman Stripe Hosiery Co., New York, was one of four women in the advertising field to receive certificates of honorable mention at the 39th Annual meeting of the Advertising Federation of America for their accomplishments. Her campaign to gain acceptance of rayon hosiery by women was the basis of the award.

K. D. Forsyth has accepted the superintendency of Bama Cotton Mills, Enterprise, Ala.

Karl B. Nixon, general superintendent of Newnan (Ga.) Cotton Mills for several years, has recently been promoted to general manager.

Fred K. Morris has resigned from Riverside & Dan River Cotton Mills, Danville, Va., and accepted the position of superintendent of spinning of Merrimack Mills, Huntsville, Ala., succeeding **A. V. Wright,** resigned.

Wm. H. Jones, who has held a position with the waste department of Callaway Mills, LaGrange, Ga., has resigned to become associated with the Railway Supply & Mfg. Co., Cincinnati, Ohio.

A. H. Hamilton, formerly superintendent of Pee Dee Mfg. Co., Unit No. 1, Rockingham, N. C., has become superintendent of Cutter Mfg. Co., Rock Hill, S. C.

L. C. Worthy has resigned as superintendent of the carding department of Geneva (Ala.) Cotton Mills and has become machinist 1st class at Wainwright Shipyards, Panama City, Fla.

J. H. McDonald, formerly with Riverside & Dan River Cotton Mills, Danville, Va., has become superintendent of Kings Mountain (N.C.) Mfg. Co.

W. H. Carter has become superintendent of carding of Eva Jane plant of Avondale Mills, Sylacauga, Ala.

Cecil G. White, formerly connected with Ware Shoals (S. C.) Mfg. Co., and Startex Mills, Tucapau, S. C., as an executive-accountant, has become office manager for Atlanta (Ga.) Woolen Mills.

A New Star Shines at Hooker

Under Secretary of War Robert P. Patterson has just informed the men and women employees at Hooker that they have won the privilege of adding a coveted White Star to the Army-Navy "E" Production Award Flag which now flies above their plant.

This White Star is awarded for meritorious services on the production front. In the words of Secretary Patterson it is:

"The symbol of appreciation from our Armed Forces for your continued and determined effort and patriotism."

It is with great pride and determination that the men and women of this company accept this honor. Pride in the accomplishments already achieved and determination that these accomplishments will be surpassed.

HOOKER ELECTROCHEMICAL CO.
NIAGARA FALLS, N. Y.
New York, N. Y. Tacoma, Wash. Wilmington, Calif.

HOOKER CHEMICALS

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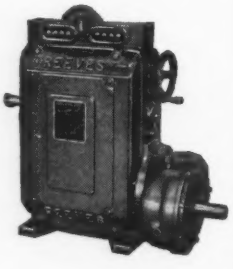
New-
REEVES Reducer-Type TRANSMISSION

Combines Variable Speed Transmission and Gear Reducer in Single Compact Unit

● The REEVES Variable Speed Transmission—the textile industry's widely preferred unit for providing accurate, infinite speed adjustability—is now available with built-in, helical-type speed reducer. With this new REEVES drive, the operator of any production machine has a wide range of low driving speeds instantly available in a single compact unit.

The entire range is covered without steps or jumps. Any required speed for best production under each changing condition is accurately obtained by turning a handwheel. It's easy to equip this unit for individual motor drive by means of REEVES adjustable motor base, which accommodates any available motor. Send for 16-page Catalog W-432, giving complete engineering information.



Vertical design especially adaptable for conditions where floor space is limited.

REEVES PULLEY COMPANY, COLUMBUS, INDIANA

Accurate Variable **REEVES SPEED CONTROL**

Textile Men in Armed Services

Edwin Lord, on leave of absence from Aberfoyle Mfg. Co., Norfolk, Va., of which he has been president, has been commissioned a major in the purchases division of the American Service Force.

Donald F. Horne, former sales manager of Wamsutta Mills, New Bedford, Mass. has been advanced in rank to lieutenant commander in the Navy.

Dan C. Lawrence, formerly president of Seaboard Mills, Inc., Elberton, Ga., is now serving in the Navy as a lieutenant, and is stationed at Charleston, S. C.

Cecil Marks, general manager and vice-president of the Covington Mfg. Co., Atlanta, Ga., has joined the armed forces and reported for active duty at Fort McPherson, in Georgia.

T. Henry Redding, vice-president of Acme Hosiery Mill, a branch of McCrary Hosiery Mills, Asheboro, N. C., has been commissioned lieutenant (j.g.) in the Navy.

William Albin, senior member of the credit department of William Iselin & Co., Inc., has been inducted into the Army.

George Waterhouse, formerly purchasing agent for the Kendall Co., Boston, who entered the Army in May, 1942, has been promoted to captain in the Ordnance Department.

Morris Blackman, assistant treasurer of Allied Textile Printers, Paterson, N. J., has joined the Army.

STANLEY S. KABASINSKEY (right), a former employee of Howard Bros., Worcester, Mass., now at Camp Cooke, Calif., snapped with Sergt. Joe Louis, world's heavyweight boxing champion.

1ST LT. JOSEPH E. GOODAVAGE, a member of the Research and Development staff of the Philadelphia Quartermaster Depot, who was associate professor of chemistry and dyeing at the Philadelphia Textile Institute before he entered the Army. He had been a member of the faculty of the Institute since 1924.

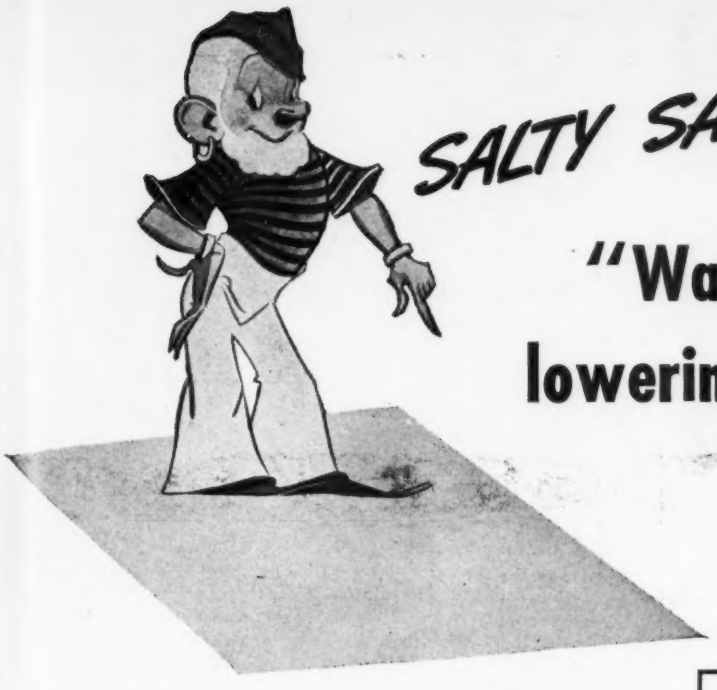
John D. Gannett, previously employed in the sales order department of Draper Corp., Hopedale, Mass., entered the Army last December, and has been commissioned a second lieutenant in the anti-aircraft section of coast artillery at Camp Davis, N. C.

Edward F. Rohmer, one of the partners of Rohmer Medford Wool Scouring Co., Medford, Mass., has been inducted into the Army and is attached to the Medical Division at Camp Pickett, Va.

Jas. A. Sorrels, Jr., formerly on southern staff of N.Y. & N.J. Lubricant Co. as lubrication service engineer, is now a corporal with the Armed Forces somewhere in North Africa.

Wm. Sapp, Dalton, Ga., formerly with Cabin Crafts office force, now in the armed services, was recently promoted to the rank of captain at Fort Eustis, Va.

E. A. Quintard, formerly an official of the Swift Mfg. Co. Columbus, Ga., and now a captain in the Army, has been recommended for the Distinguished Flying Cross for action in the South Pacific. He is a graduate of Textile School of the North Carolina State College, Raleigh, N. C., and has



SALTY SAYS:

"Want level dyeing while lowering production costs?"

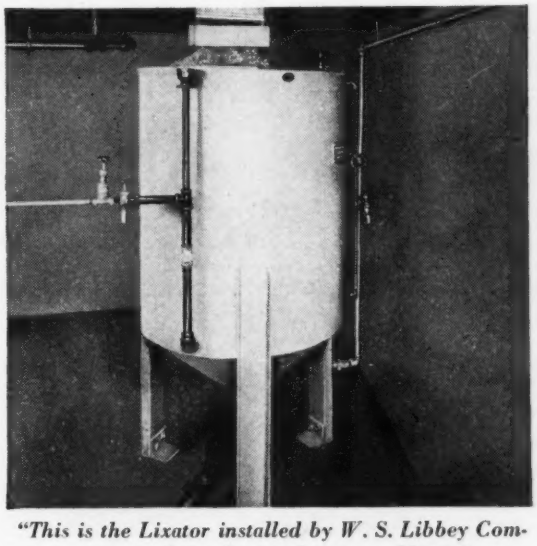
"IF YOU use a *100%* saturated brine for exhausting the dyes in place of *dry* salt . . . you can eliminate spotting, streaking and white edges!

"You see, brine disperses evenly throughout the vat . . . there's no chance of undissolved crystals ruining the dye lot when you use a *100%* saturated brine.

"And when you install a Lixator . . . you get 100% saturated brine every time! It's produced *automatically*. Furthermore, the Lixator cuts your production costs directly. First of all, it uses 10% to 20% *less* salt. Second, it utilizes inexpensive Sterling Rock Salt.

"But not only will the Lixator help you do a better job of dyeing. Lixate brine steps up the efficiency of zeolite water softener regeneration also.

"Can you think of a more valuable addition to your mill? And the beauty of it is—you don't need a heavy capital outlay in order to install a Lixator. International leases the machine to you for a very nominal annual sum. Get the facts, *today!*"



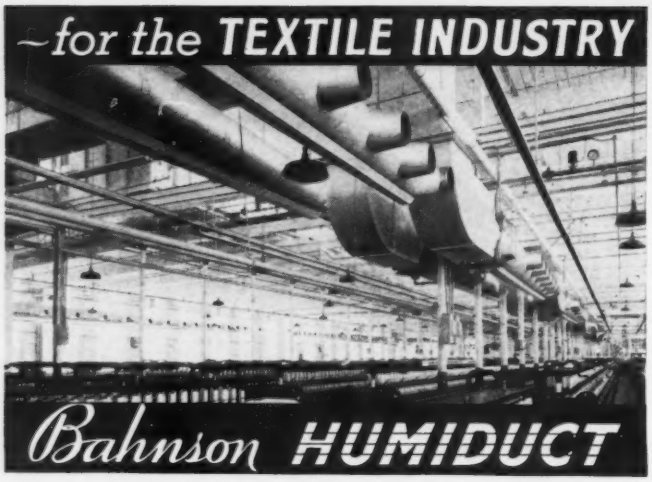
"This is the Lixator installed by W. S. Libbey Company, at their plant in Lewiston, Maine."

"IT'S FREE!"

"Let me send you this 36-page fully-illustrated booklet on the Lixate Process for making brine. It gives you all the facts—installations, brine tables, diagrams, formulas. Just write for *your* copy!"

The **LIXATE** *Process*
Reg. U. S. Pat. Off.
for making brine

INTERNATIONAL SALT COMPANY, INC., DEPT. T7, SCRANTON, PENNSYLVANIA

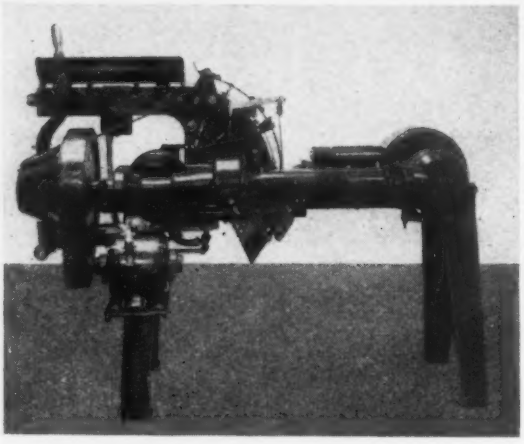


The Bahnson Humiduct is based on the Unit System that permits of greater flexibility for installation, or for remodeling, shifting machinery and making other changes that alter heat loads in a given room or mill.

The Humiduct principle gives positive distribution and constant circulation. It can supply air in any form — hot, cold, humid, dry, cleaned or in any combination — automatically controlled.

Bahnson Engineers are available for servicing old equipment —priority installation—or post-war planning.

Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.



THE TYPE K
BOBBIN STRIPPER

HIGH CLEANING CAPACITY
Protects barrel and finish. Usually pays for itself in one year—always within 18 months.

Complete information promptly furnished upon request

The Terrell Machine Co., *Inc.*
CHARLOTTE, N. C.

W. J. Westaway Co., Ltd. . Hamilton and Montreal, Canada
James F Notman . . . . Needham, Mass.—N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J.—Penn., N. J. and N. Y.
Geo. Thomas & Co. . Manchester, England.—European Agt.

been in the service since March, 1941.

Hugh W. Causey, Charlotte, N. C., salesman for Solvay Sales Corp., is now serving in the Navy.

Charles E. Bateson, 3rd, a graduate of the Philadelphia Textile Institute, and now a first lieutenant in Army Air Corps, has been awarded the Army Air Medal for making 25 operational flights against the Japanese in the New Guinea area.

Charles B. Roberts, Jr., office manager of Bibb Mfg. Co., Columbus, Ga., before entering the armed services as a pilot of an Army photograph reconnaissance plane, with rank of lieutenant, is reported missing in action in the South Pacific.

Obituary

W. Harris Thurston, 52, New York, a pioneer in developing wind-resistant and water-repellent fabrics, wide airplane cloth and SS balloon cloth, died at Southampton, N. Y., on June 29. He developed the fabric later known as Byrd cloth for the Byrd Antarctic expedition. He also did a major part of the typewriter ribbon fabric business. He began his career with Clarence Whitman & Co. in 1911. He later formed his own company, which after several name changes is now the Thurston Cutting Corp.

Jacques Bramhall, 61, senior merchandising executive of Iselin-Jefferson Co., New York, died at Morristown, N. J., June 30. He began his dry goods career with Faulkner, Page & Co., was later with Deering Milliken & Co., and was for some years senior New York partner of Amory, Browne & Co.

William A. Mitchell, 63, former agent of Massachusetts Cotton Mills, Lowell, for a time a representative of cotton textile interests in China, and later a manufacturer in Houston, Tex., died at Hanover, Mass., June 21.

Philip Speed Tuley, 75, dean of the textile industry in Kentucky, died June 22 in Louisville. He retired seven years ago as president of the Louisville Textiles, Inc., formerly Louisville Cotton Mills.

Richard E. Kersey, vice-president of Progressive Silk Finishing Co., Hoboken, N. J., died June 29. He had been with his firm for over 40 years.

Roland L. Taylor, 74, chairman of the board of Tubize Chatillon Corp., New York, died June 23. He entered the rayon business in 1920.

W. L. Beyer, Sr., 83, formerly secretary and general manager of the old National Duck Mills, Atlanta, Ga., died at Atlanta. He formerly served as general manager of a branch of the Mt. Vernon-Woodberry Co., Baltimore, Md., and later was general manager of West Point Mfg. Co., Langdale, Ala.

J. Foster Barnwell, 65, Abbeville, S. C., president of Abbeville Cotton Mills until he retired about a year ago, died June 25. He began with the mills as a cotton weigher and rose to the presidency.

James Metcalfe, 50, general superintendent of Wamsutta Mills, New Bedford, Mass., died June 21. He joined the mills 32 years ago as a sweeper. He was appointed superintendent in 1939, and was a veteran of the first world war.

William J. Morrice, 81, vice-president of Canadian Cottons, Ltd., Montreal, Canada, died May 31. Mr. Morrice was associated with the firm throughout his business career. It was formerly known as D. Morrice & Sons, having been founded by his father.

William Callanan, 63, for almost 20 years credit manager of Interwoven Stocking Co., New Brunswick, N. J., died last month.

Henry B. Estes, 88, who retired in 1940 after many years as agent and treasurer of Continental Mills, Lewiston, Maine, died recently.

J. G. Dobb, vice-president of Dominion Textile Co. and of Paton Mfg. Co., Montreal, Canada, died recently.

Charles F. Rauser, Sr., 80, president of Shorewood Mills, Milwaukee, Wis., died last month.

Mrs. Lily Morehead Mebane, Leaksville, N. C., president of the Morehead Cotton Mill Co., Spray, N. C., and widow of B. Frank Mebane, for many years identified with the textile industry in Leaks-

PROTECTS FABRICS OF ALL KINDS

COLACET

Franklin's

WATER REPELLENT

Here is an easy, economical and practical way of giving *extra protection, greater beauty and serviceability* to cotton, linen, natural silk, cellulose, acetate and wool.

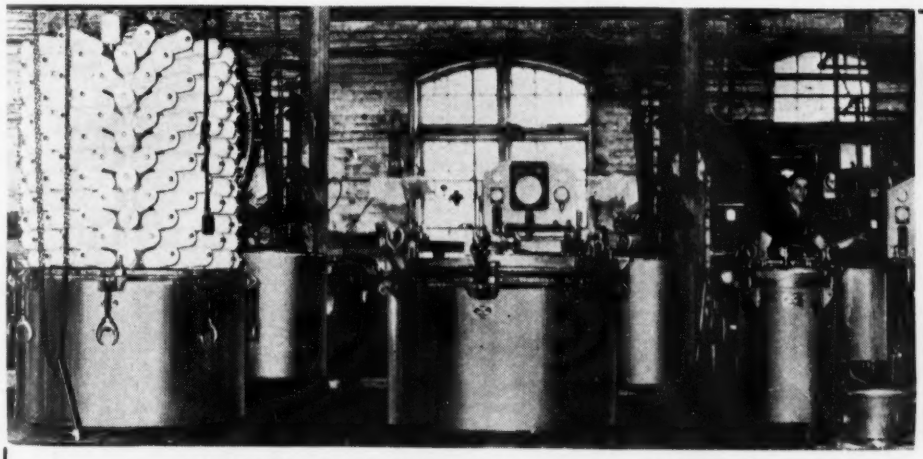
Colacet makes textiles water repellent, stain and spot resistant, gives them a rich looking sheen, and helps them to stay *fresh looking and new.*

May we send literature that tells the complete story?

Colacet conforms to Quartermaster Corps Tentative Specifications P.Q.D. No. 115 b dated November 19, 1942.

FRANKLIN RESEARCH COMPANY

Makers of Rubber Gloss ---------- PHILADELPHIA



Model KRAG 407 Twin Package Spindles, Machine with Carrier.

Builders of

Cotton & Wool Dyeing Machines
for
Beams • Packages • Rawstock Skeins
•
Centrifugal Pumps

Centrifugal Extractors and Driers
•
Rayon Cake Dyeing Machines
•
Dye Spindles and Perforated Tubes

STAINLESS STEEL CONSTRUCTION

All Subject to Required Priorities

Standard Fabricators
INCORPORATED

355 WALTON AVENUE • NEW YORK, N. Y.

Replacement Parts For Existing Machines Can Be Furnished

Obermaier

The spindles on the model KRAG are placed horizontally on carrier, which makes for easy loading and unloading.

Two packages are loaded on one spindle, so that any desired flow of dye liquor can be obtained by the use of larger capacity pumps.

This model is ideal for the dyeing of tubes of cones as the outer circumference of the loaded cones increases in direct proportion to the larger bottom diameter of the tapered form of the cones.

The special feature of this machine is the built-in indirect heating cylinder which makes for even temperatures throughout the entire bath and consequent level dyeings of any shades sensitive to heat.

At the same time, it reduces the liquor ratio to a minimum, thereby producing most economical dyeings, especially with vat colours.

They want jobs, not dimes, when they come home

Buy War Bonds—buy more bonds —so there'll be prosperity and jobs for the boys when they come home this time.

Shamrock

Canvas Baskets, Hampers, Trucks

Manufactured by
MEESE, INC.
Madison, Ind.

UNIVERSAL RIBBERS
true rib
FOR PERMANENT ELASTICITY
SNUG FIT IN HOSIERY TOP
Here is the machine to put permanent elasticity and snug fit into hosiery tops—at minimum expense. Every part and every motion of the FIDELITY Universal Ribber reduces cost. Dogless has no vibrating parts — avoids repairs and delays. Free vertical dial movement makes "picking up" easy.
To inspect an entire section of the dial, simply loosen one thumb screw. Loose course plate reduces needle breakage. Heads, interchangeable without new dogless parts. Take-up gears entirely enclosed prevent oil spots and seconds. One-piece frame increases rigidity. FIDELITY Universal Ribber operates with less noise, vibration, attention. Write for detailed information and data.
FIDELITY
FIDELITY MACHINE COMPANY
3908-18 Frankford Ave., Philadelphia, Pa.

NEWS ABOUT MEN

ville-Spray, died June 15, at her home in Leaksville, after several month's illness. She served in the State Legislature for two terms in 1931 to 1933.

H. R. Gaffney, 44, Atlanta, Ga., manager of the branch plant of the Steel Heddle Mfg. Co. there, died June 10. He was a graduate of Georgia Tech., a lieutenant in World War I, and currently a captain in the Civil Air Patrol.

Joseph Ott, 82, founder and for many years president of the Royal Weaving Co., Pawtucket, R. I., one of the largest silk weaving plants before its liquidation in 1937, died at Pawtucket on June 29. Starting with 8 looms in 1888, he built the business up to a 10-acre plant with 2,400 silk looms.

John J. Barnes, 64, general superintendent, Richard Borden Mfg. Co., Fall River, Mass., died at Fairhaven June 2. He was formerly overseer of weaving at Booth and Acushnet Mills, and later superintendent at the Dartmouth and Whitman Mills, all of New Bedford, Mass.

Walter M. Hastings, 70, for many years purchasing agent of the Monomac Spinning Co., Lawrence, Mass., died June 13 at Methuen. He was born in West Newton and was graduated from the Lowell Textile School and Harvard University. He was associated with Monomac for 38 years.

George F. Jarrett, 61, who operated the Roller Covering Shop, Cherryville, N. C., for more than 30 years, until three years ago when he became connected with the Carolina Roller Covering Co. there, died suddenly June 19.

C. Everett McLean, 65, manager of Patchogue-Plymouth Textile Mill, Lawrence, Mass., died June 1 at Methuen.

Earle R. Gibbs, treasurer of Gibbs Loom Harness & Reed Co., Clinton, Mass., and for many years active in this field, died at Clinton June 7.

Claude D. Diefenderfer, 59, for 35 years foreman at Auburn (Pa.) Knitting Mill, died June 8.

Fred A. Abbott, president and co-owner of Amos Abbott Co. woolen mill, Dexter, Me., died recently. The company was founded in 1820 and has been run by the Abbott family for its entire existence. Jere Abbott, cousin of Fred Abbott, treasurer of the company, remains as its head.

EARL D. PARKER

Earl D. Parker, 63, vice-president and general works manager of Barber-Colman Co., Rockford, Ill., died suddenly June 12. He was with the firm for 40 years, had been general works manager since 1923, and became vice-president last fall as a result of executive changes following the death of Howard D. Colman, founder and president of the company. Mr. Parker has been active in association work in the machine tool field.

Walter Holdsworth, 67, general manager of Somersworth (N.H.) Textile Co., for 40 years, died June 13. He had recently retired from active work.

Reginald Pike, 55, president and owner of the Woodland Hosiery Mills, Cheltenham, died recently.

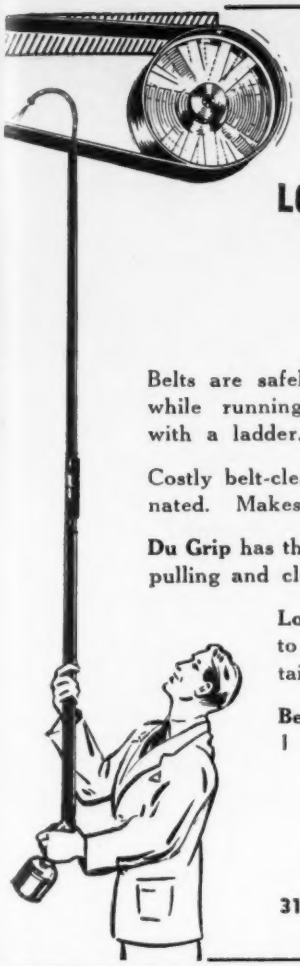
Wm. C. Kirkpatrick, formerly president and general manager of Virginia Mills, Inc., Swepsonville, N. C., until he retired from the textile industry, died recently.

Wm. Alfred Woodruff, technical adviser to Bibb Mfg. Co., Macon, Ga., and associated with the company since 1907 when he began his work as superintendent of the units at Porterdale and Columbus, Ga., died recently.

James T. Allen, 49, of Taylor, Clapp & Beall, New York, died June 12.

Jacob Feinberg, head of Jac Feinberg Hosiery Mill, Rock Hill, S. C. and of Jac Feinberg & Son, New York, selling agent, died at his home in New York June 15.

J. Dobson Schofield, 74, formerly head of John & James Dobson's, Manayunk, Pa., died at his home in Ocean City, N. J. last month. He retired from business ten years ago.



FOR

SAFETY & ECONOMY

USE OUR PATENTED

LONGSHOT BELT OILER

AND

DU-GRIP BELT OIL

Belts are safely treated when they need it, while running, in half the time required, with a ladder.

Costly belt-cleaning and static can be eliminated. Makes the old method ridiculous.

Du Grip has the highest degree of preserving, pulling and cleaning qualities.

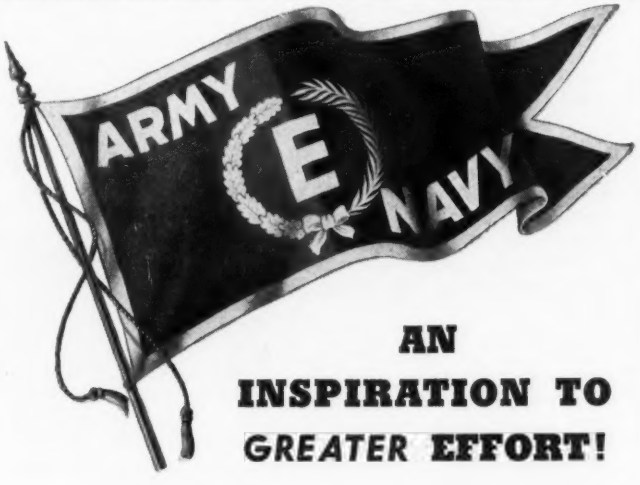
Longshot is collapsible, and easy to handle. Special lengths obtainable. Standard—8 feet.

Bearing Oilers also available from 1 to 10 feet long.

Literature on request

DU-GRIP MFG. CO.

3142 Bellevue Rd., Toledo 6, Ohio



AN INSPIRATION TO *GREATER* EFFORT!

The entire ALFRED HOFMANN & CO. organization is deeply grateful for the honor of now being numbered among the selected group of companies who have won the coveted Army-Navy "E" award for Excellence in War Production.

We are proud to run up the colorful pennant over our plant . . . and we shall be proud to keep it flying there, not merely for having met the requirements for this distinction . . . but as a daily inspiration to greater and still greater effort towards winning the all-out battle of production.

ALFRED HOFMANN & CO.

WEST NEW YORK, N. J.

ALFRED HOFMANN, INC. ALFRED HOFMANN NEEDLE WORKS, INC.

Southern Representative

SOUTHERN HOSIERY MACHINE & SERVICE CO., Valdese, N. C.

John P. Maguire & Company

INCORPORATED

Factors

370 FOURTH AVENUE

NEW YORK

Check Credits

Cash Sales

Absorb Credit Losses

CORRESPONDENCE INVITED

RYERSON CERTIFIED STEELS

Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

TIR

TEXTILE INDUSTRY RESEARCH
INCORPORATED
11 WEST 42ND STREET NEW YORK. N. Y.
CONSULTANTS ON TEXTILE MANUFACTURING
AND DEVELOPING
SPECIALIZING IN
OPERATING METHODS. WORKING CONDITIONS.
MAINTENANCE. WASTE CONTROL.
NEW FIBRES AND PROCESSES

Persimmon Shuttle

perfected by WATSON-Williams as the answer to the dogwood shortage. Impregnated for long, satisfactory service. Tested under all conditions, on different fabrics, different looms.

WATSON-WILLIAMS
MANUFACTURING CO.
The Shuttle People Millbury, Mass.
SOUTHERN OFFICE: W. F. Daboll, 810 Woodside Bldg., Greenville, S. C. NORTHERN REPRESENTATIVE: G. C. Burbank, 32 Beaconsfield Rd., Worcester, Mass.

TEXTILE MILL NEWS

Cotton Mill News

Cannon Mills Co., with plants at Kannapolis, N. C., Concord, Salisbury, China Grove, all in North Carolina, and York, S. C., plans closing the week of July 18 to 24 to make necessary repairs.

Clark Thread Co., Austell, Ga., has acquired former mill of Consolidated Textile Corp. at Pelham, Ga., and will occupy for new branch mill.

Englander Co., North Kansas City, Mo., manufacturer of mattresses, has leased a one-story building to be erected by North Kansas City Development Co., at Burlington Ave. and 16th St., and will occupy for expansion. Cost estimated close to $100,000, with machinery.

Entwistle Cotton Mill, No. 2, unit, Rockingham, N. C., has been purchased by the Beaunit Mills, Inc., New York, for a cash price of $330,000. The new owners will take charge as soon as the mill runs out the materials in process, which will probably take a month or longer. The deed of transfer was filed June 16, following a meeting of the stockholders. By terms of the sale, Beaunit acquires 116 acres, which includes the mill building with 637 looms and 23,392 spindles, and surrounding mill houses. The new owners will continue to operate the mill and after the war plan to renovate it with new machinery. The mill is on war orders, operating two shifts daily.

Fisher Mfg. Co., Fisherville, Mass.—Entire capital stock and property of this company has been acquired by Cabot Mfg. Co., Brunswick, Md., which will operate as an affiliated property in future.

Fitchburg (Mass.) **Duck Mills**—Controlling interest in this company has been purchased by Edward H. Hall, president and general manager, Fitchburg (Mass.) Screen Plate Co. Company has been reorganized, with Mr. Hall as head. Operations will be continued as heretofore.

Frieda Mfg. Co., Kings Mountain, N. C., has been sold by A. A. Shuford, of Hickory, N. C., and associates, to I. Rogosin, of New York, who operates the National Weaving Co. and the Beaunit Mills, Inc., of Lowell, N. C.

Gainesville (Ga.) **Cotton Mills** have been sold to Pacolet Mfg. Co., New Holland, Ga., and Pacolet, S. C., for a consideration of $500,000. The sale, involving transfer of all holdings, was effective when announced June 23. The newly acquired properties will be known as Pacolet Mill No. 6, and will be under the general supervision of Marshall C. Stone, who has been general manager of Pacolet Mill No. 4, at New Holland since 1933.

Hannah Pickett Mfg. Co., Rockingham, N. C., of which W. B. Cole is chairman of the board, has purchased Pine Lake Acres, consisting of 110 acres of land and 40 acres of water, which will be used for the operatives. The mill will construct cabins, cooking ovens, bath houses and boats for the use of the 1,500 operatives of the two mills and for the enjoyment of their families.

Modern Industries, Inc., Greenville, S. C., has been chartered with authorized capital stock of $100,000 to manufacture and deal in textile fabrics, operate plants and factories, etc. R. C. McCall is president and treasurer; W. W. Pate, vice-president and secretary. These men are also officials of Convenience, Inc.

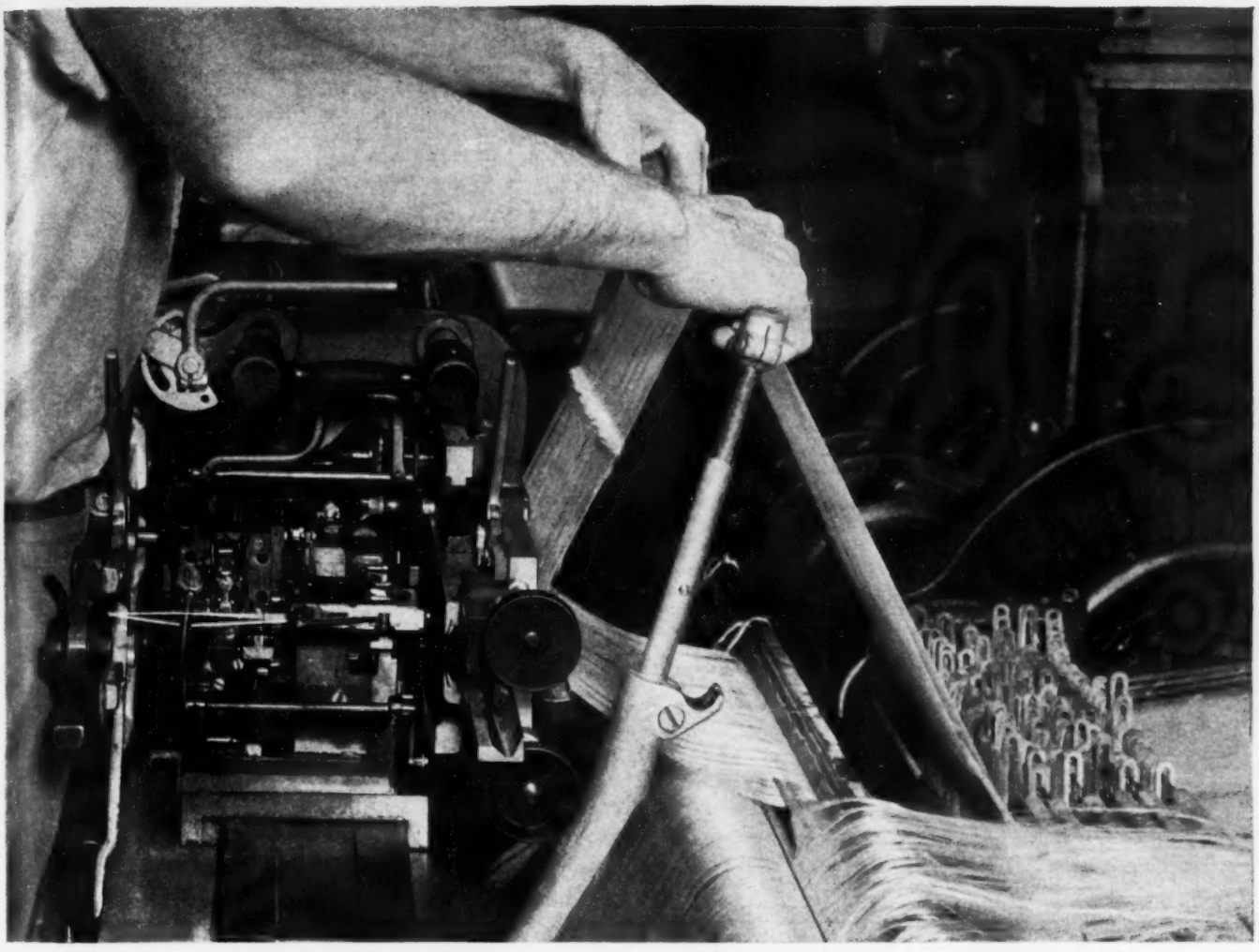
Pawtucket, (R. I.) Braided Rug Co. has been organized to operate a local mill. The incorporators include Joseph W. Grimes and Mortimer G. Cummings, North Providence, R. I.

Pacific Mills, Hampton Division, Columbia, S. C., have installed new machinery and modern conveniences have been arranged for operatives. The Lyman, S. C., unit, has work going forward on new filtration plant.

Pisgah Mills, Inc., Brevard, N. C., announces that it has recently completed a skein mercerizing unit.

Southern Webbing Mills, Greensboro, N. C.—Controlling interest has been bought by R. S. Dickson & Co., Charlotte, and W. H. Barnhardt has been elected president. J. T. Kilpatrick has been made vice-president and treasurer, and W. J. Cooke, vice-president and superintendent.

United States Lace Curtain Mills, Inc., New York, N. Y., have been incorporated



Rayon Warp-Tying, by Portable Machine

RAYON warp can be replenished *at the loom* by using a Barber-Colman Model "LS" Portable Warp Tying Machine. This machine is compactly designed so it will work directly back of the loom in alleys as narrow as 12". It is light and sturdily built and can be easily and quickly moved from one location to another. It is hand-operated and ties-in the warp in sections, each section or load being approximately 15" wide. The knotting mechanism, which includes a "stumbler" to eliminate missing any ends, is normally operated at about 300 knots a minute. Since the machine will handle as fine as 40 denier yarn, all parts are precision made to extremely close standards and fully interchangeable. A good operator can be trained in a short time, requiring principally the ability to be careful and pay attention to significant detail. The picture shows one load being completed, the operator making an inspection of the uniform row of knots before clearing the machine for the next load. Bulletin F-1256-4, which will be sent promptly on request, will describe this machine to you in greater detail.

For Example . . .

From our field records, we cite this experience of a rayon goods manufacturer working 100% on war material:

Yarn Counts	75 to 150 denier rayon
No. of Ends	2500 to 10,000
Knots Tied per Hour	4000 to 8500
Sley	56 to 280

Comparison of loom hours lost per week due to stoppage for replenishment of warp:

Before installing warp tying machine	325
After installing warp tying machine	50
Loom Hours Saved per Week	275

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

ATTENTION!

That's what your fabrics will get from the purchaser when you use

DRUMMOND SOAP

Here's why . . . If you have to meet Army Quartermaster Department specifications your fabrics will show a big improvement right down the line if you use

DRUMMOND SOAP

It's a high-body product of low alkali content . . . No filler of any kind . . . A high binding quality that results in minimum flocking . . . Saves on steam and water because it rinses easily and completely . . . Better fulling and scouring . . . Leaves fabric perfectly clean with softest feel, better hand, brighter colors and whiter whites . . . Want to try it? Just write us today for a free working samples and test Drummond Soap on your own goods.

Protect the FUTURE of Your Business with WAR BONDS!

Standard Soap co. of camden

205 South 2nd St. Camden, N. J.

Woonsocket, R. I. G. TANGUAY 241 HARRIS AVE.

STAINPRUF PROCESS

STAINPRUF

The

FUNGISTATIC—BACTERIOSTATIC WATER REPELLENTS

(On approved Army lists)

A significant new development offering a single bath treatment, water or solvent soluble, for *mildewproofing and water repellency*. Meet all applicable Government specifications. Non toxic under intended conditions of use, may be applied to wide variety of fabrics. Very attractively priced. Inquiries invited from Army Contractors.

ATLANTIC STAINPRUF CO.

Phone 4-2500 Chatham, New Jersey

CARMAN & CO., INC., 629 W. 27 ST., N. Y. C.

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE

This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

by officials of Desley Fabrics Co., New York, to succeed to company of same name, with mill at Kingston, N. Y., recently acquired, now engaged in production of war materials.

Wool Mill News

American Felt Co., Glenville, Conn., has begun erection of three one-story additions to plant, for which general contract has been let to Mertz Co., Port Chester, N. Y., consisting of a cutting and shipping room, about 25x89 ft., and two warehouse structures.

Esmond Mills, Inc., which operates plants at Esmond, R. I., Waynesboro and Lynchburg, Va., has taken a three-year lease on the handkerchief factory near Hale's Culvert in the West End of Bluefield, W. Va. The blanket mill operating 48 looms on baby blankets, is expected to employ around 150 persons—about 90 men and 60 women. Machinery will soon be installed in the modern two-story structure and it is hoped that full operation may be achieved by Oct. 1. R. C. Scott of Danville, Va., will be superintendent.

Hillsborough Mills, Pine Valley, near Milford, N. H., suffered damage by fire to its office building June 9. Fire was believed to have started in the laboratory on the second floor.

Quaker Pile Fabric Corp., Philadelphia, has acquired the one-story stone and brick buildings at the northeast corner of 21st and Godfrey avenue, Philadelphia. The lot is 172x455 feet and the assessment $40,000.

Webster (Mass.) **Woolen Mills, Inc.,** is a new enterprise which has purchased a three-story factory from the Tiffany estate. Leo Honig is president and Walter G. Seidl, vice-president and superintendent.

West Bend (Wis.) **Woolen Mills Co.,** have begun erection of one-story addition, for which general contract recently was let to Boesman Co., West Bend.

Rayon & Silk Mill News

Atlantic Rayon Corp., Royal Little, president, Providence, R. I., has bought Suncook (N. H.) Mills which operates 1350 looms on rayons and fine cottons.

Celanese Corp. of America, Inc., Amcelle, Md., plans rebuilding of cellulose acetate department at mill, recently damaged by fire, caused by an explosion, with loss reported close to $200,000.

Industrial Rayon Corp., Cleveland, Ohio, plans expansion in mill at Painesville, Ohio, for production of special rayon yarn for automobile tire manufacture for Government. Work will comprise several new buildings and is reported to cost in excess of $500,000, with equipment.

Robeson Textiles, Inc., St. Pauls, N. C., has been purchased by the Burlington Mills Corp., Greensboro, N. C., and added to that chain of mills. The Robeson plant has 32,000 spindles and a battery of 30 looms. O. G. Morehead will continue as manager of that unit.

Tennessee-Eastman Corp., Kingsport, Tenn., will operate a new mill for Government, located in Roane County, exact place not announced, now in course of construction. It will comprise several large one and multi-story buildings, with entire project to cost about $20,000,000, with machinery, financing being provided by Defense Plant Corp., Washington, D. C., federal agency. J. A. Jones Construction Co., Charlotte, N. C., is general contractor.

Knitting Mill News

Black River Mills property, Ludlow, Vt., has been sold by Henry D. Vail to Louis F. Harder, of Philmont, N. Y. Mr. Harder has operated the High Rock Knitting Co. in Philmont for many years.

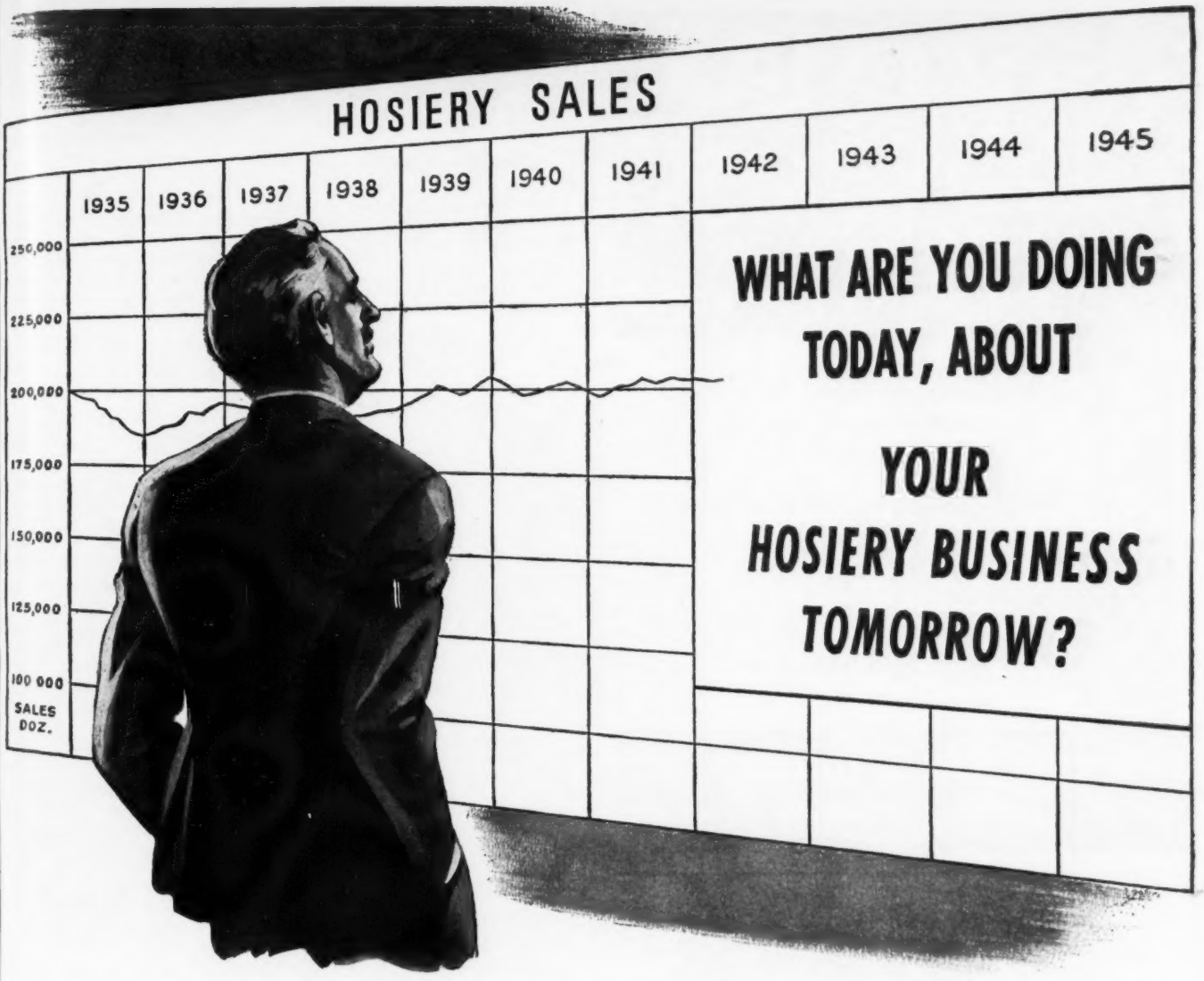
Cinderella Underwear Co., Reamstown, Pa., was destroyed on June 13 by fire attributed to a bolt of lightning.

Davis Hosiery Co., Greensboro, N. C., has been organized with capital of $100,000, to operate a local mill, and will begin production soon. J. L. Davis, Sr. and Jr., and Thomas Turner, Jr., Greensboro, head the company.

Duke Knitters, Inc., 32 West 18th St., New York, N. Y., will remove to building at 45 West 23rd St.

Eagle Knitting Mills, Inc., Milwaukee, Wis., have awarded contract to Universal Construction, Inc., for improvements in mill, including new movable runway and other facilities. Federal Engineering Co., is engineer.

Full-Knit Hosiery Mills, Burlington, N. C., will operate a branch mill on Morgan St., Shelby, N. C., where a one-story industrial building has been



For all the demands of the war economy on the hosiery industry, progressive mill management is not losing sight of the fact that some day the war will end. When that day comes, meeting consumer demands will not be so simple as reverting to the manufacturing techniques before the war began.

The war is stimulating change. New consumer buying habits are being formed. New stocking ideas are being developed—in combinations of materials untried only a short while ago. The wide variety of new styles that have come out of this emergency to capture the public imagination is a tribute to the skill and ingenuity of the industry.

These are but hints of the probable direction of peacetime operations. It will be well to study the changing trends closely—for their effect on your business in "nineteen-hundred-and-post-war."

Far-sighted management, noting the public's reaction to these and other changes as the war economy tightens, is adjusting future plans accordingly—with an eye to securing and holding a more favorable position in the battle of markets once the war is over. In laying out your post-war program of action, the right knitting machines are of primary importance. We have given serious thought to hosiery mills' post-war problems in an effort to help you do quick marketing with the coming of peace. If you would like to "talk things over," simply drop us a line.

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point offices.

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

ESTABLISHED 1865

SCOTT & WILLIAMS

INCORPORATED

4 0 W O R T H S T R E E T • N E W Y O R K, N. Y.

WHITMAN YARNS
WORSTED • COTTON • SPUN RAYON
ARLINGTON MILLS
LAWRENCE, MASS.
•
MONOMAC SPINNING CO.
LAWRENCE, MASS.
•
NONQUITT MILLS
NEW BEDFORD, MASS.
WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

Engineers
J. E. SIRRINE & COMPANY
GREENVILLE SOUTH CAROLINA

Testing Speeds and Safeguards Production
To maintain production at the peak levels essential to the War Program, use *Scott Testers to eliminate purchasing questions, discover safe production shortcuts, prove the finished product. Our 60 models serve textile testing needs for tensile, hysteresis, flexing, twist, crepeage, etc., from single hair to one ton.
SCOTT TESTERS
* Registered Trademark
HENRY L. SCOTT CO. 95 Blackstone St. Providence, R. I.

leased. Structure will be improved and equipped with about 60 knitting machines, to be transferred from Burlington.

Glastonbury Textile Realty Corp. which bought the Glastonbury (Conn.) Knitting Mills, has been denied Government permission to move the machinery to New York. As a consequence the property will again be offered for sale.

Griffin Hosiery Mill, Burlington, N. C., has been moved by its owner W. S. Griffin to larger quarters on Tucker St. It came from Haw River, N. C., to Burlington last year. Plant is capitalized at $30,000, operates 57 S. & W. circular machines, now 100% on socks for the Navy.

James Knitting Mills, Hickory, N. C., lately chartered with capital of $100,000, plan operation of a local hosiery mill. New company is headed by A. N. and C. Frank James, officials of Kindley Cotton Mill, Mount Pleasant, N. C.

Malone Knitting Co, of Springfield, Mass., has taken over the old Bell shoe factory, building, Wolfeboro, N. H., and will start a branch plant. From 30 to 35 women will be employed at first, later to be increased to 200.

McDonald Hosiery & Finishing Mill, Thomasville, N. C., was gutted by fire June 4.

Pilot Mountain (N. C.) **Hosiery Mills, Inc.,** with authorized capital stock of $50,000, was chartered June 11, with the following incorporators: R. B. Davis, Pilot Mountain, and T. C. Barber and Jim Dix, both of Mount Airy, N. C.

Ripon (Wis.) **Knitting Works** plan replacement of damage at mill caused by recent fire. An official estimate of loss has not been announced.

S. & W. Hosiery Mills, Englewood, Tenn., have leased a one-story industrial building at Athens, Tenn., and will occupy for new branch mill.

Victory Hosiery Corp., Hagerstown, Md., which purchased and reconditioned the property of Windsor Knitting Mills, Greencastle, Pa., plans manufacture of army and navy socks at the new mill.

A. J. Williamson Hosiery Mills, Englewood, Tenn., have leased a one-story building at Athens, Tenn., for new branch mill for production of anklets for children and infants. Operations are scheduled to begin at once.

Processing Plant News

Davis Screen Plant, Fall River, Mass., **Dodgeville Finishing Co.,** Attleboro, Mass., and **Artex Dyeing & Finishing Co.,** Paterson, N. J., have been appointed finisher licensees under the American Viscose Corp's. "Crown" Tested Plan, being fully qualified to dye and finish rayon fabrics in accordance with the standards established under the "Crown" Tested Plan.

Enterprise Dye Works, Woonsocket, R. I., has work underway on a 2-story addition. Brien Bldg. Co., Woonsocket, has the general contract. The addition will include a machine shop and warehouse.

Housatonic Dyeing & Printing Co., Derby, Conn., has awarded general contract to Harold Wakely, Seymour, Conn., for improvements in mill, including roofing and other work.

Ribbon Dyeing & Printing Co., New York, sold its machinery and equipment by auction to various buyers on June 8. Sale was in charge of L. R. Kline, New York, auctioneer.

River Point Finishing Co., West Warwick, R. I., recently chartered with capital of 500 shares of stock, no par value, plans early operation of local dyeing and finishing mill. Incorporators include Charles Montague and Maurice O. Guerin, Providence, R. I.

Tryon (N. C.) **Processing Co.**—The interest of F. S. Wilcox in this company has been bought by R. S. Dickson & Co., Charlotte. W. H. Barnhardt succeeds Mr. Wilcox as president.

United States Finishing Co. reports consolidated net profit of $415,507 for the year ending Dec. 31, 1942. This compares with $193,046 for the preceding year.

Walmar Screen Printing Co., Inc., Long Island City, New York, N. Y., care of Irving Gordon, 347 5th Ave., New York, attorney and representative, has been organized to operate a local textile printing and finishing works.

Western Piece Dyers & Finishers, Inc., Chicago, have taken out a permit for new one-story addition, about 60 x 70 ft., for expansion in main production department. West Englewood Cement Block Co., Chicago, has contract.

In Rain or Snow or Muggy Heat

Wherever they are — wherever they may go — our fighting men have the constant protection of fabrics finished to meet the needs of global war. With experience born of peacetime service but with a resourcefulness geared to the needs of war, Arkansas takes pride in producing at top speed for textile processing and finishing plants whose fabrics must meet rigid government specifications.

FUNGICIDE G

For mildew-proofing all types of military fabrics — insect netting, jungle canopies, tentage, sleeping bags, webbing, camouflage netting, etc. Meets government specifications. Non-toxic, non-irritating.

AQUAROL*

For producing a water-repellent finish on uniform cloths, overcoatings and other military fabrics — used in a single bath treatment with Fungicide G to impart mildew resistance and water repellency.

*Reg. U. S. Pat. Off.

Newark, New Jersey

Arkansas Co. inc.

"Look it up first"

in the TEXTILE WORLD YEARBOOK and CATALOG

In the Catalog Sections . . .

WHENEVER you need details on equipment or supplies . . . whenever you need information on companies or products . . . "look it up first" in your 1942 Textile World Yearbook and Catalog.

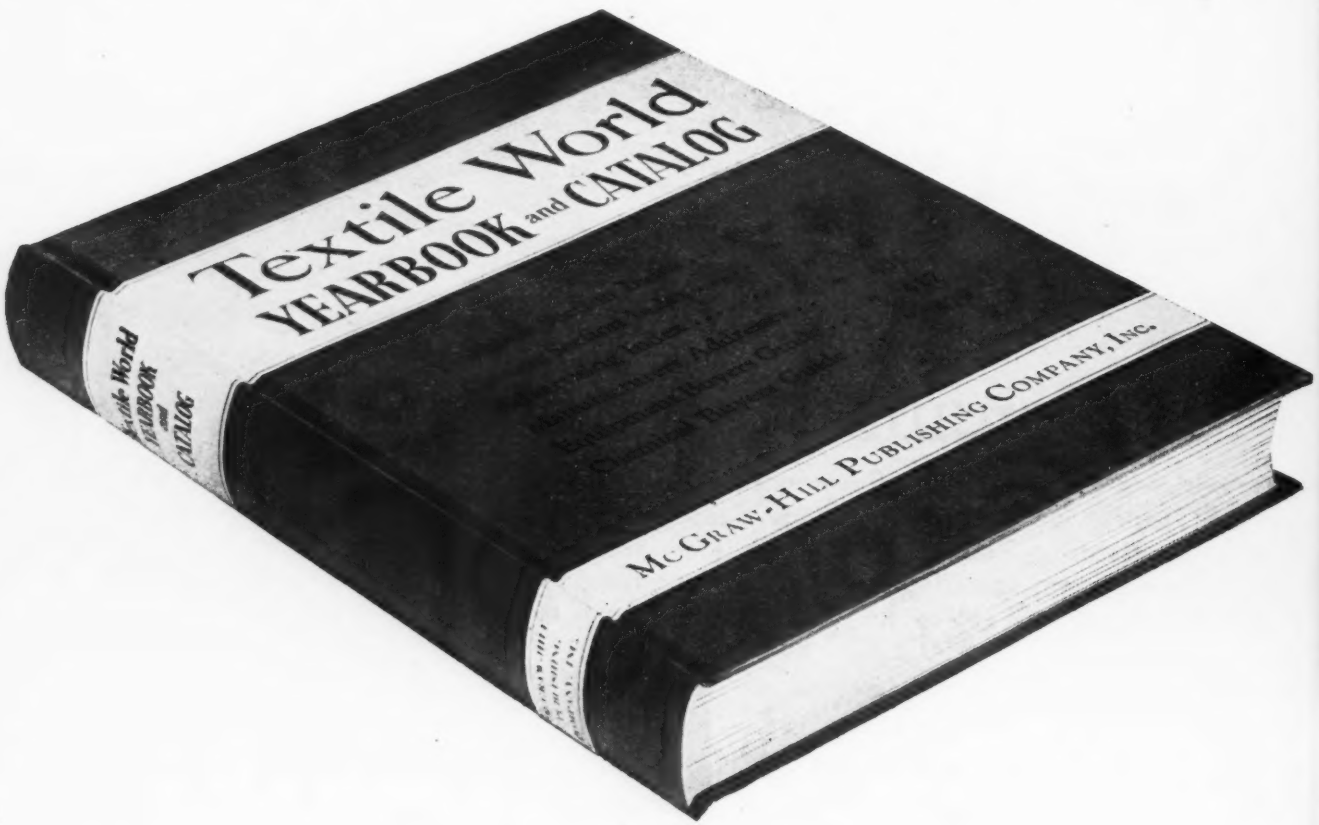
In this one *complete* volume you will find a classified directory of manufacturers of material, machinery and supplies used in textile mills—an equipment buyers guide, a chemical buyers guide—and over 200 pages of manufacturers' catalogs giving detailed information about their products.

Whatever you need "look it up first" in the Textile World Yearbook and Catalog.

In the Data Sections . . .

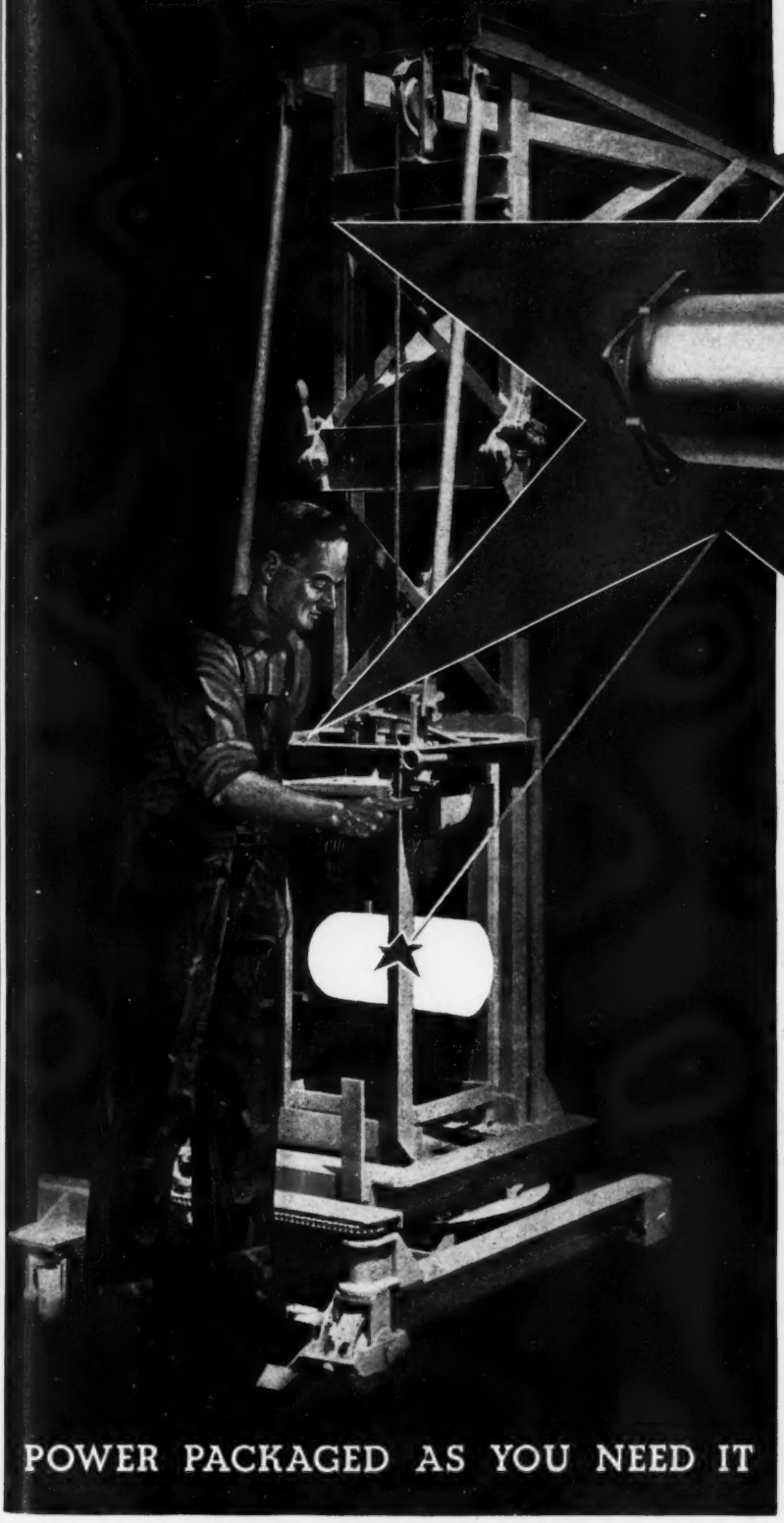
WHENEVER you need technical information about mill operation or maintenance, whether it be *general* data applicable to all textile mills, or *specific* data for the guidance of cotton men; wool men; silk and rayon men; or dyeing, bleaching and finishing men you will find the answers in the 100 pages of your 1942 Textile World Yearbook and Catalog, devoted to Mill Reference Data.

Whatever your problem, "look it up first" in this authoritative compilation of useful data presented for your convenience by the Editors of Textile World.



"The Yearbook with the Orange Band"

In the tight spots it's a STAR



POWER PACKAGED AS YOU NEED IT

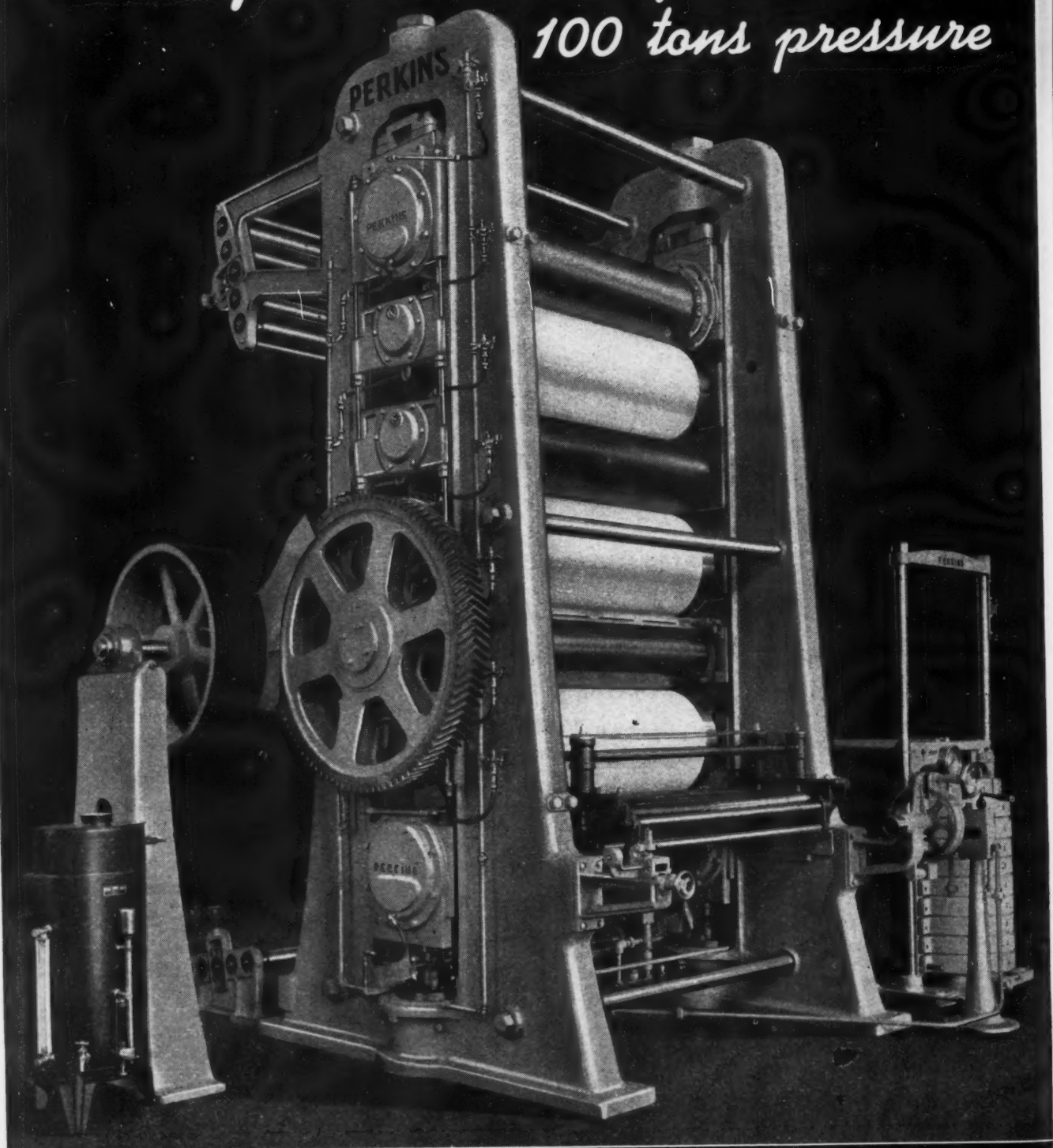
Barrett-Cravens' revolving portable crane illustrates Star's ability to accommodate varying HP needs to frame-space limitations. Through its welding process—and through its specialized engineering service—Star provides "tailored" ½ to 2 HP motors meeting Barrett-Craven requirements to a "t", without the necessity of special molds and castings. Each motor is self-braking. Just another example of Star performance which combines the flexibility of specialized application and specialized engineering with the obvious advantage of standardized design. Star Electric Motor Company, Bloomfield, N. J.

For 33 years Star Motors have provided a complete line of standard as well as specialized motors—in sizes from ½ to 200 HP. Today they are providing dependable power for hoisting and many other industries. Write us about your requirements.

STAR MOTORS

PERKINS *hydraulic rolling and chasing calender*

100 tons pressure

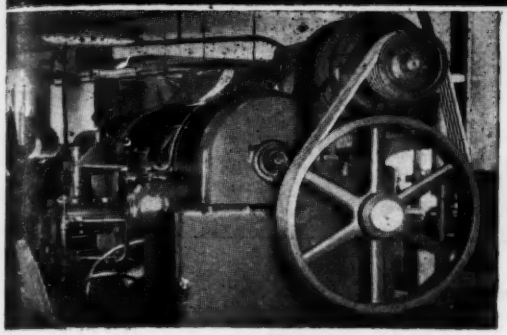


B. F. PERKINS & SON, Inc.

HOLYOKE, MASS., U.S.A.

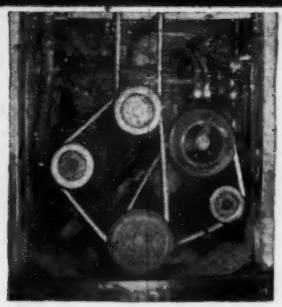
LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

In Use for Years by Leaders of U. S. Industry



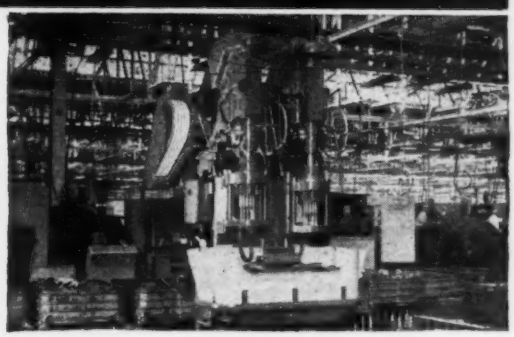
In a
Leading Machine-Parts Plant—

belts on screw machines and grinders are subjected to a severe oil condition. GATES special synthetic belts were adopted 100% for this severe service after months of testing proved that they last three times as long as any rubber belt ever used.



A Large User of
Rear Engine Coaches

could get only 13,000 to 14,000 miles from natural rubber belts in rear engine coach and bus service where rapid and frequent acceleration and deceleration create high temperatures. GATES special synthetic belts are giving double the life in this demanding service.



This
Outstanding Aircraft Factory

—one of the nation's leaders—has found that Gates special synthetic belts last three to four times as long as regular rubber belts on machines where the belts are badly exposed to oil.

GATES
Heat and *Oil* V-BELTS
of *Special* Synthetic Rubber

Are Giving Up to 230% Longer Life than natural rubber belts when subjected to heat and oil . . . Initial cost at present is higher . . . recommended to meet especially severe oil and heat conditions.

Gates has been building V-belts with synthetic rubber for many years. Thousands upon thousands of Gates V-belts without an ounce of natural rubber in them have now seen years of service in many of the nation's leading industrial plants.

From this long experience with synthetic rubbers, Gates engineers have developed a V-belt built of a special synthetic which withstands severe heat and oil conditions that natural rubber simply cannot stand. The initial cost of these special belts is at present higher than Gates Standard Vulco Ropes. That is why the Gates Field Engineer you consult now recommends this special heat and oil belt only if its higher cost will be more than offset by longer service life.

There are many commercial types of synthetic rubbers. Gates has had wide experience in the use of all of them.

You have doubtless seen recent press dispatches stating that all V-belts will shortly be made of synthetic rubber. Gates long experience and success in this field clearly represent a substantial advantage in giving you a synthetic rubber V-belt of truly superior quality.

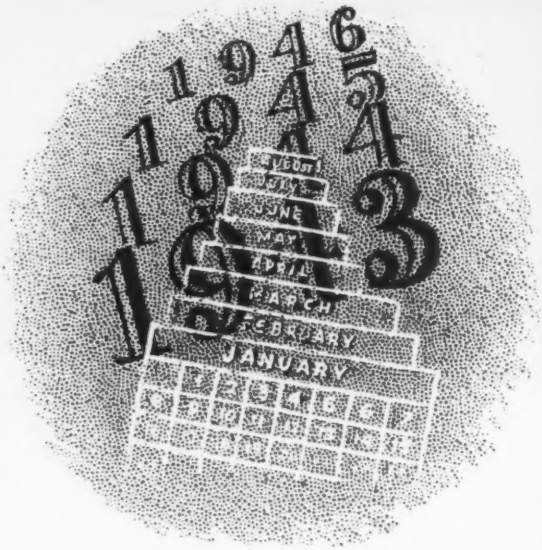
THE GATES RUBBER COMPANY

437

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

CHICAGO, ILL. 549 West Washington
DALLAS, TEXAS 2213 Griffin Street
NEW YORK CITY 215-219 Fourth Avenue
BIRMINGHAM, ALA. 801-2 Liberty National Life Building
DENVER, COLO. 999 South Broadway
CHARLOTTE, N. CAROLINA 507 Builders' Building
GREENVILLE, S. CAROLINA 104 West Washington Street
ATLANTA, GA. 738 C. & S. National Bank Building



Duplan's

WAR EXPERIENCES ARE CROWDING YEARS INTO MONTHS

We can't divulge the details of our present day experiences with new fibres, new yarns and new methods for their manipulation into textiles for many war purposes.

We can tell you, however, that this experience is equipping us well for resumption of normal civilian operation.

Duplan will be, better than ever, able to handle your yarn processing problems whether they relate to a gossamer thread or a yarn for the brawniest of textiles.

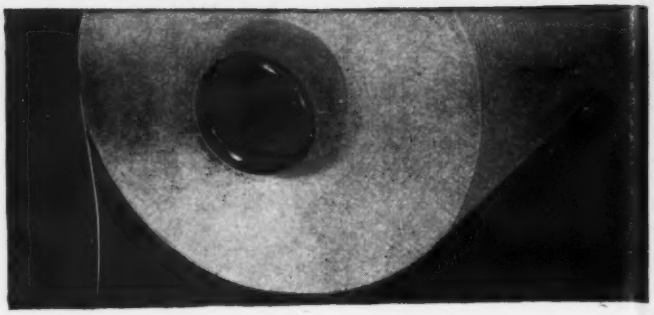
RAYON • ACETATE RAYON • NYLON
SILK • COTTON • WOOL
FOR KNITTING OR WEAVING
FOR MILITARY OR INDUSTRIAL USE

THE

Duplan

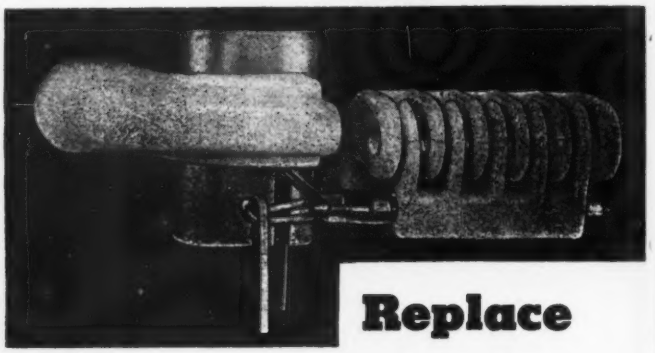
CORPORATION

512 Seventh Avenue, New York
Philadelphia, 18 West Chelten Avenue
Chattanooga, Provident Building
Charlotte, Johnston Building



COUNTER-BALANCED TENSION

Patented



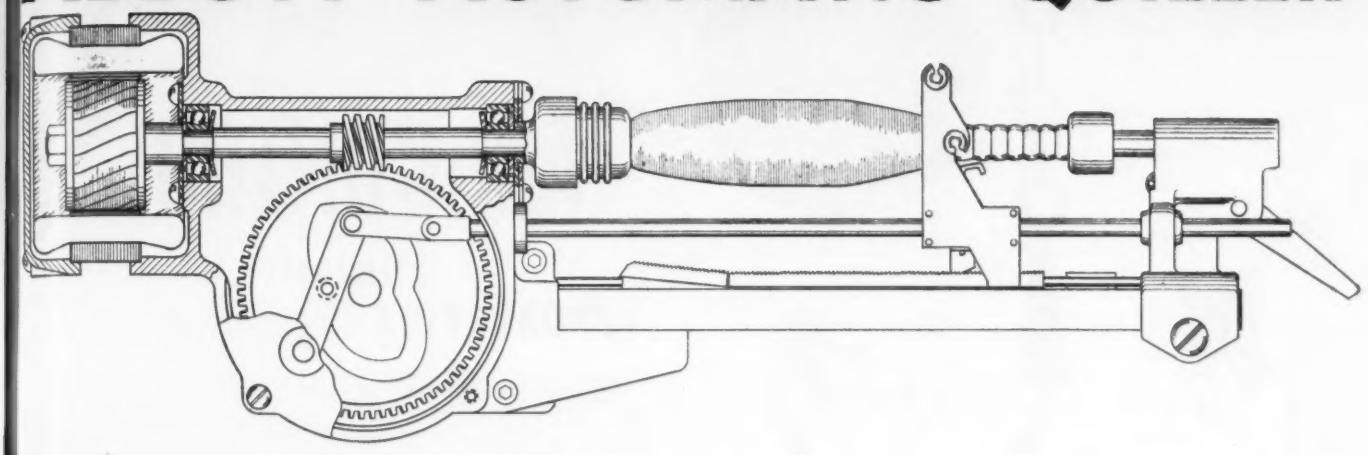
Replace Your Present Tensions

with the only balanced thread tension on the market. A guaranteed uniform tension is obtained regardless of the thread used or the speed employed. Over 20,000 already in use in woolen, rayon and cotton mills in all parts of the country. Send for trial order or write for full information.

Robert Reiner, Inc.
Weehawken, N. J.
(10 minutes from Times Square via Lincoln Tunnel)

ROBERT REINER INCORPORATED

ABBOTT AUTOMATIC QUILLER



All there is to the winding units:—

A low voltage three phase motor drives the spindle directly

Double throw cam gives overlapping layers of wind

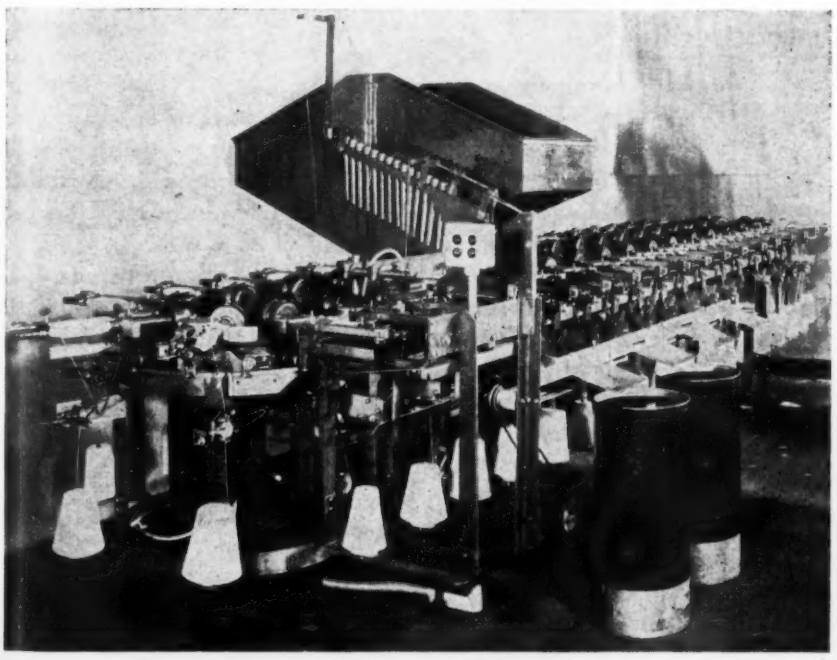
Diameter and shape of bobbin easily and accurately controlled by a feeler working against a stationary rack

Detectors stop motor when bobbin is full or when thread breaks

Spindle speeds up to 5000 RPM

Winds cotton, worsted, woolen, silk, rayon, etc.

Bunch is controlled by making one adjustment instead of adjusting all winding units.



Low investment cost due to simple construction, and use of ONE automatic head to serve all spindles.

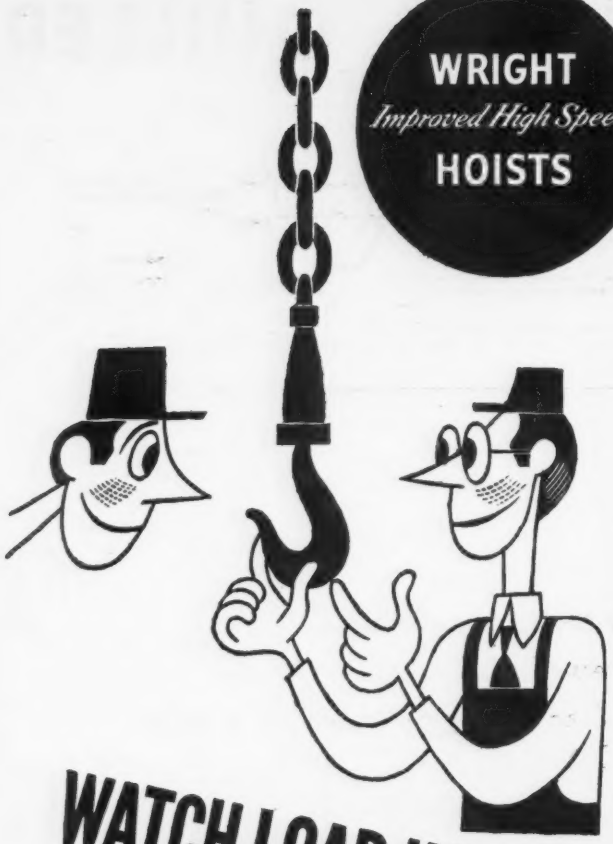
Low labor cost due to feeding bobbins from a large central supply.

ABBOTT MACHINE COMPANY

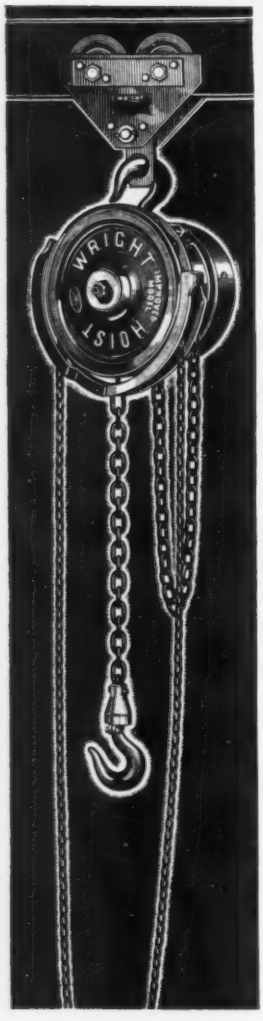
WILTON, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

WRIGHT
Improved High Speed
HOISTS



WATCH LOAD HOOK!



WRIGHT HOISTS are built to carry more than their rated capacities, but like other well-made pieces of mechanical equipment they should *not* be overloaded. Overloading is dangerous to men and imposes excessive strain on the hoist. Certainly, this is no time to take chances with either men or machines.

Watch the load hook. Wright load hooks are drop-forged from special steel which, when subjected to overloading, give visible warning by opening slowly. When the load hook has started to open, look to the top hook too, for while it is stronger than the bottom hook, it also may be reaching a danger point. When hooks show the effect of overloading, replace them immediately with new ones. Remember: repair parts are both easier and cheaper to get than a complete new hoist.

Send today for a free Crane Signal Chart. This chart (36″ x 24″) illustrates the various crane signals—and the use of the Wright system of crane signals will speed crane operation and promote safety. Write for your chart today.

WRIGHT MANUFACTURING DIVISION
York, Pa., Chicago, San Francisco, New York
AMERICAN CHAIN & CABLE COMPANY, INC.
BRIDGEPORT, CONNECTICUT

In Business for Your Safety

ARMY E NAVY
FLYING OVER THE WRIGHT HOIST PLANT

AIR CONTROL

Eliminates PRODUCTION Casualties, too!

Control of the air in a textile mill, here at home, by means of adequate humidification, accurately regulated humidification, compensation for increased heat generation and induced ventilation, is just as vital as clearing up the sky above New Guinea or Tunisia. Static electricity, dust, fly and heat can sabotage production during a time when full scale operation is needed. Only with adequate, carefully controlled humidification can machines maintain their full rated output.

Is your humidification system adequate? Is your equipment antiquated and improperly regulated? Do you have sufficient units and control stations to win *control of the air* in your mill? Have you *checked* these factors recently? A few, seemingly unimportant changes and replacements may put your mill *back in the thick of the fight.* American Moistening Co., Providence, R. I. Atlanta . . Boston . . Charlotte.

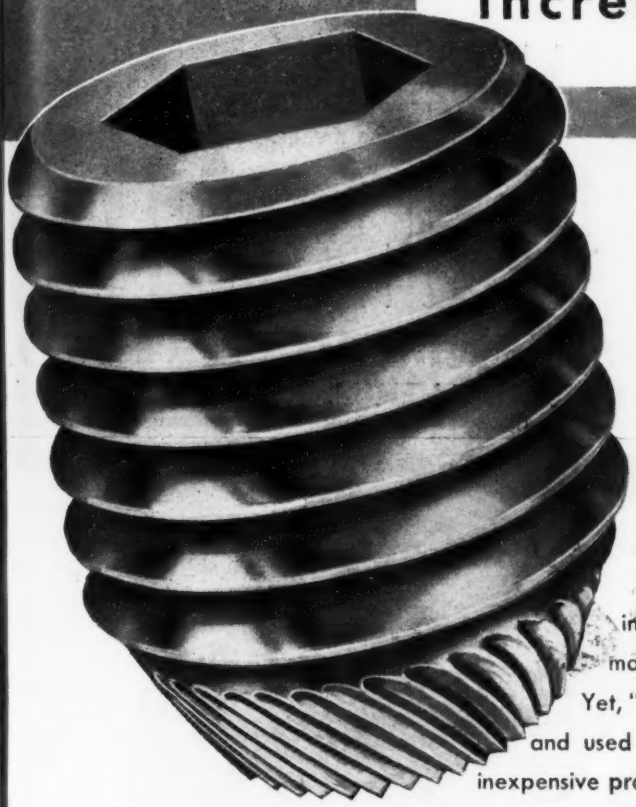
Amco
HUMIDIFICATION
Speeds Production

SCREWS IMPORTANT?

I'll say...The right screw is the difference between costly breakdowns and increased production

UNBRAKO

Reg. U. S. Pat. Off.



Self-Locking Hollow Set Screw with Knurled Point. Pat'd & Pats. Pending

SELF-LOCKING HOLLOW SET SCREWS

with the Knurled Points

Yes, sir! When you install "Unbrako" Self-Lockers on your looms and other machinery where there is vibration, you remove one cause of machine breakdowns. When tightened like ordinary set screws, their knurled points dig in and hold tight . . . keep gears, pulleys, sprockets and cams from working loose. That means fewer machine shutdowns . . . less maintenance . . . more and better quality goods produced. Yet, "Unbrako" Self-Lockers can be removed easily with a wrench and used over and over again. Why not give your machinery this inexpensive protection? Order a supply today from your mill supply house or direct. But insist on getting "Unbrako" Self-Lockers — the only set screws with knurled points.

KNURLING *of Socket Screws originated with* "UNBRAKO" *years ago*

YOU should have a copy of the "UNBRAKO" SCREW CATALOG

"UNBRAKO" WELT-BAR SCREWS

Uniformly strong and accurate "UNBRAKO" Welt Bar Screws insure extra satisfaction in many a mill. Ask for samples of these, too.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PA., BOX 571 BRANCHES: BOSTON · DETROIT · INDIANAPOLIS · CHICAGO · ST. LOUIS · SAN FRANCISCO

HOW BIG
can an Air Express shipment be?

AS TO WEIGHT, your shipment may be a pound or a ton and up, so long as it fits in a plane. **AS TO SIZE,** you will be safe in following dimensions shown underneath the illustration.

However, large shipments can often be broken into a number of smaller units. When this is impossible, consult your local Railway Express Agency, who can often make special arrangements for handling larger shipments.

FOR FASTEST DELIVERY, ship early, as soon as package is ready. PACK COMPACTLY but securely, to cut AIR EXPRESS costs.

Maximum dimensions for AIR EXPRESS *packages: Length, 35 to 49½ inches; width, 44 inches; depth, 18½ inches. Larger shipments should be broken into smaller units whenever possible to conserve valuble space.*

Air Express Speeds War Program

TODAY, AIR EXPRESS not only serves the home front but is also working hand in hand with the Army and Navy to supply our fighting fronts throughout the world.

TOMORROW, AIR EXPRESS will girdle the globe in international peacetime commerce . . . to bring *all* foreign markets to the doorstep of American business.

AIR EXPRESS
Gets there FIRST

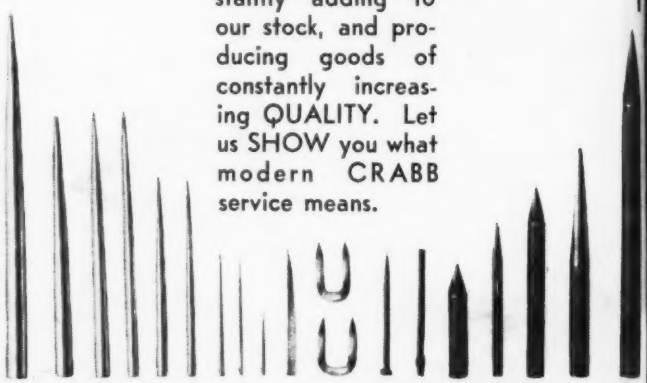
Phone RAILWAY EXPRESS AGENCY, AIR EXPRESS DIVISION
Representing the AIRLINES of the United States

WRITE for our quick-reference handbook on "How to Ship by AIR EXPRESS During Wartime." Dept. PR-2, Railway Express Agency, 230 Park Avenue, New York City.

QUALITY **PINS** SERVICE

PINS
BY CRABB
to Speed War Production

We are carrying in stock a large number of items, constantly adding to our stock, and producing goods of constantly increasing QUALITY. Let us SHOW you what modern CRABB service means.



WILLIAM CRABB & CO.
301 THIRD AVENUE, NEWARK, N. J.

Standardize on
TABER ABRASER
"WEAR CYCLE" TESTS

All fabrics . . . cotton, woolen, rayon and silk can be quickly and easily tested and rated in terms of "wear cycles" with the same Taber Abraser. Scientific wear action by "Calibrase" wheels and turn table provide "wear cycles" that are totaled on built-in cycle counter.

Only a small 4"x4" swatch is required for each test which makes it practical to rate the wear quality of every bolt or lot of fabric.

Discover how you can guard against complaints and rejections with the Taber Abraser by writing for Bulletin 4001 NOW.

TABER INSTRUMENT CORP.
111 TW GOUNDRY STREET, NORTH TONAWANDA, N. Y.
ALFRED SUTER, 200 Fifth Avenue, New York, N. Y.
Eastern Representative
Designers and Builders of Precision and Scientific Apparatus

APPROVED
DANDUX
BASKETS
MADE BETTER
LAST LONGER

DANDUX 100 LAUNDRY BASKET

WHY are Dandux baskets used by state and government institutions which buy to rigid quality standards on a competitive price basis? More wear-per-dollar is the answer. The same factors make Dandux the leader in the textile field, too. If *you* want the maximum in quality in baskets, hampers and trucks, at the lowest long-term cost, outline your needs to us today. We'll rush prices and specifications at once.

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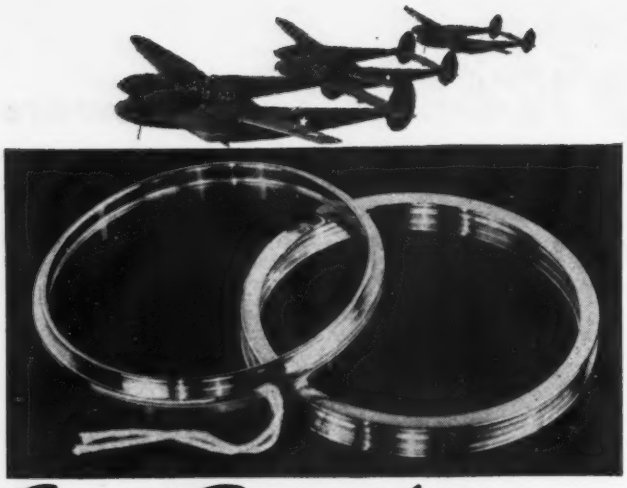

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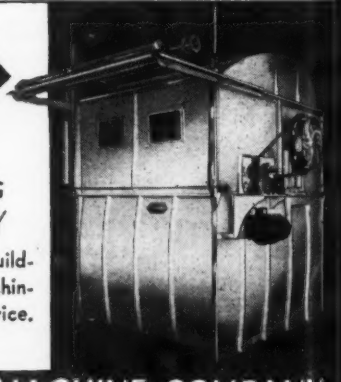

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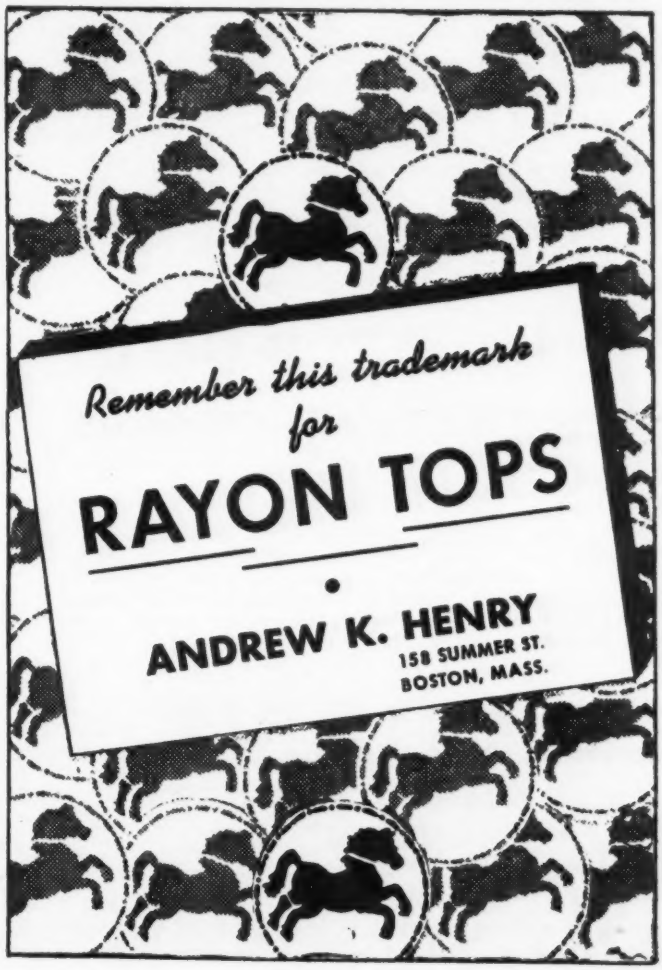

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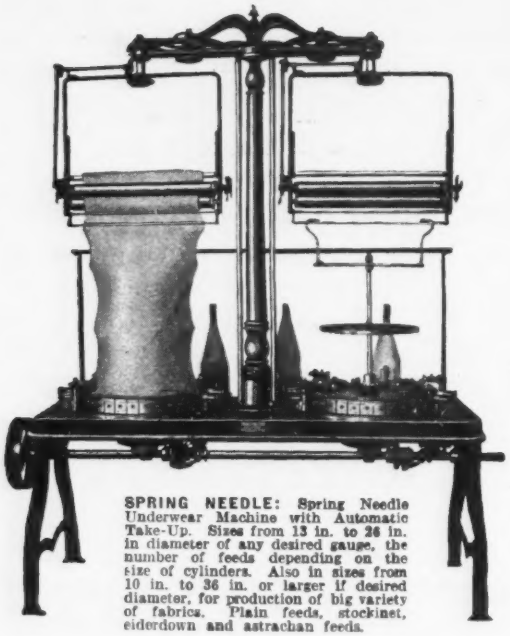

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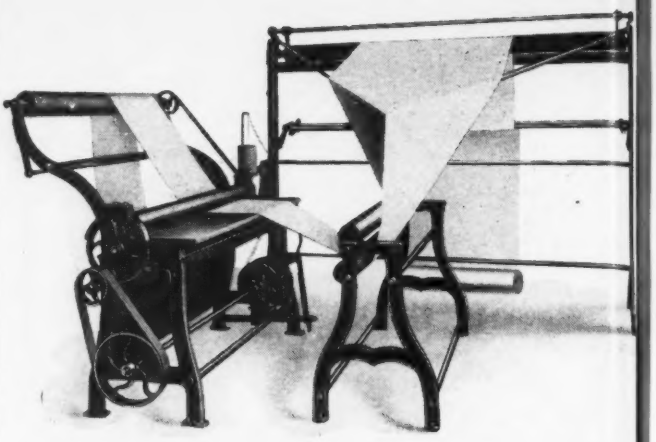

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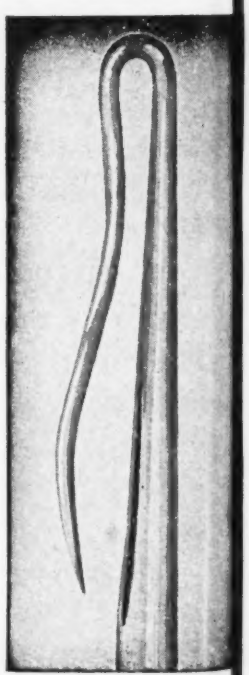

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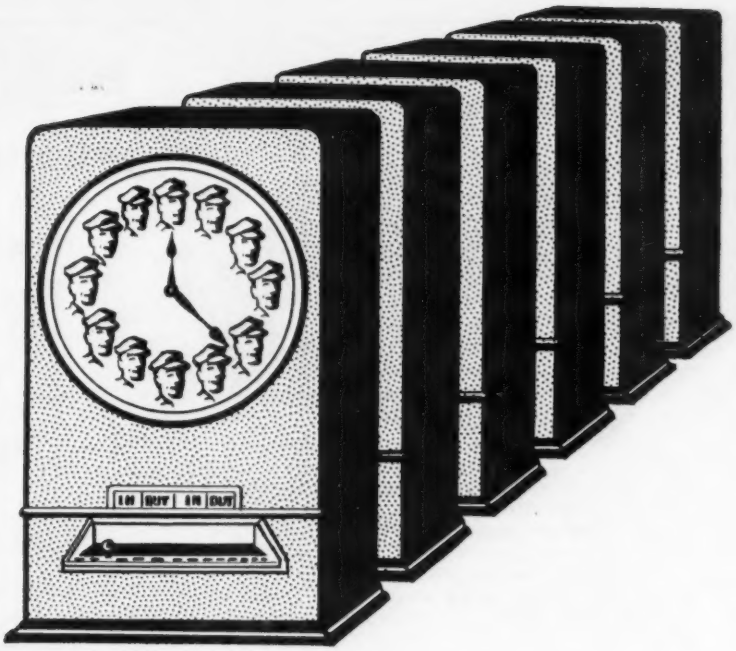

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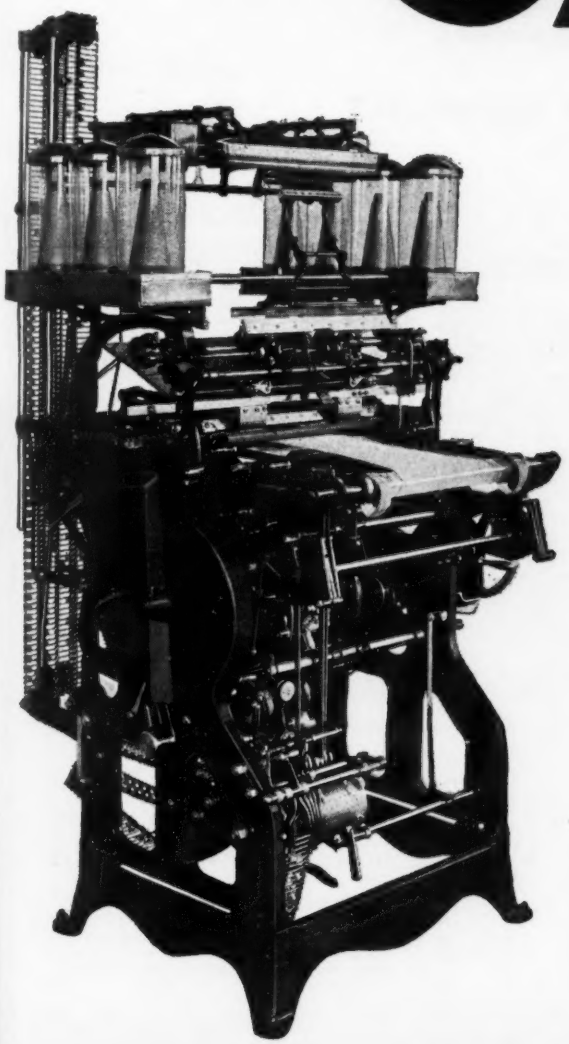

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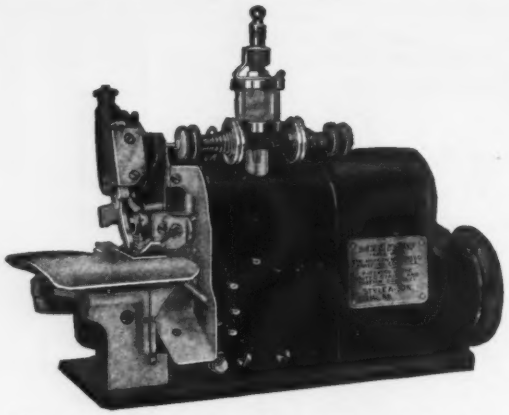

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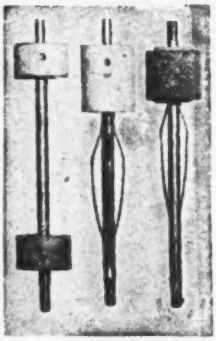

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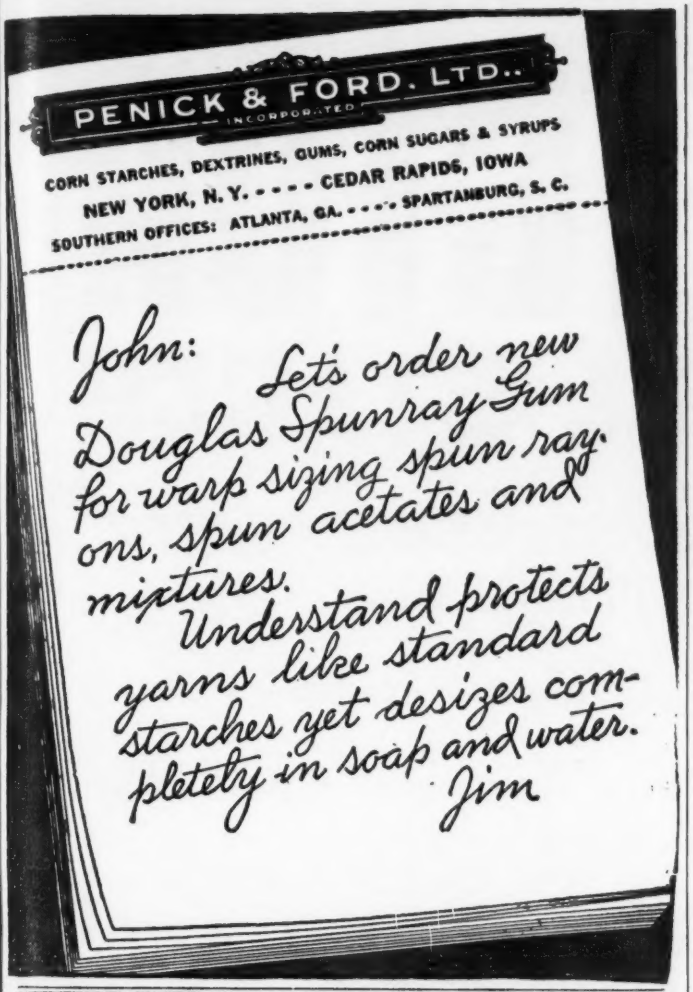
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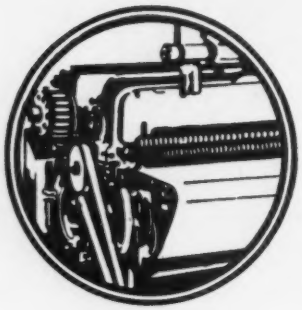

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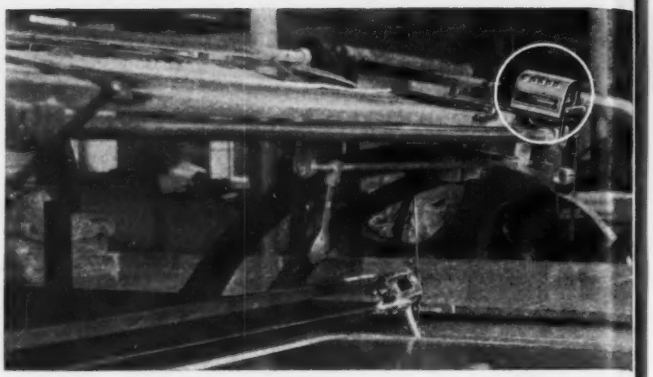

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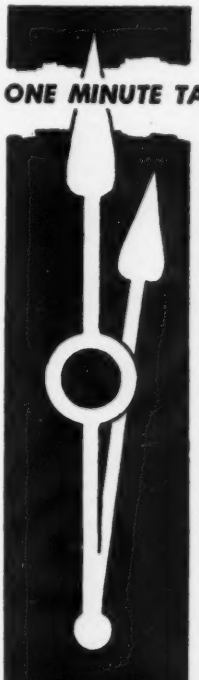

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MILL SUPERINTENDENT

Phila. Textile Plant employing 100 people now producing nationally known commodity and planning big post-war expansion is seeking man with good manufacturing background to assume full charge of production and personnel.

Must possess initiative, resourcefulness and be capable of maintaining excellent employee relations. Splendid opportunity for capable mill executive to create a permanent post-war post with excellent future and good compensation.

State age, draft status, education, detailed record of experience, starting salary desired. All information held strictly confidential.

P-605, Textile World
330 West 42 St., New York City

WANTED

Textile Colorist—Chemist

for screen printing plant. Must have varied experience on all types of fabrics and dyestuffs on machine or screen printing. Give full details in first letter. Write

P-619, Textile World
330 W. 42nd St., New York, 18, N. Y.

WANTED

Woolen Mill Superintendent

A specialist in production of woolen yarn and expert buyer of raw wool. Must know carding, spinning, knitting, finishing and dyeing.

Write **P-618**, Textile World
330 W. 42nd St., New York, 18, N. Y.

POSITIONS VACANT

WANTED MANUFACTURING CHEMIST to supervise plant manufacturing textile print gums, softeners, die assistants, finishes, etc. Only experienced men need apply. State qualifications fully. P-607, Textile World, 330 W. 42nd St., New York, N. Y.

WANTED: Experienced man or name of mill that would test out Picking Band Leathers for foreign type on over pick loom. Will pay liberally for time or give the name of any testing firm doing this work. P-608, Textile World, 330 W. 42nd St., New York, N. Y.

WANTED: Working supervisor in small rayon mill. One experienced in slashing and loom-fixing. P-609, Textile World, 520 N. Michigan Ave., Chicago, Ill.

WANTED YARN SUPERVISOR for blending, carding and spinning both woolen and cotton system—experienced preferred. Write giving experience record and salary desired. P-610, Textile World, 330 W. 42nd St., New York, N. Y.

SPANISH TRANSLATOR—Well-educated man or woman familiar with textile mill terminology. Good typist. Ability to assume responsibility. In replying give full particulars as to age, education, experience, salary desired. P-624, Textile World, 330 W. 42nd St., New York, N. Y.

POSITIONS WANTED

TEXTILE ENGINEER desires position. 16 years experience, Production Planning Time Study Wage Incentive Cost Personnel General Management Problems. PW-617, Textile World, 330 W. 42nd St., New York, N. Y.

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Specialist in pile fabrics, practically & theoretically trained in all products. Have broad experience in technical developments of equipment and fabrics. Trained in business administration. Studied textiles abroad. Linguist. Married. Draft status 4A. Qualified to increase production, quality, cut cost. Capable to do research on looms, cloth, etc. Function in consulting capacity or seek investor for a practically tried-out new & improved upholstery fabric at lower competitive cost for the post-war period.

PW-600, Textile World, 330 W. 42 St., N.Y.18, N.Y

POSITIONS WANTED

OVERSEER of WEAVING Rayons and cottons. Thoroughly experienced on Draper and Stafford looms, Plain, Cams and Dobbies. Also understand Winding, Warping, Slashing etc., on Rayons, Acetates and Cottons. Can get out production. Know how to handle labor. Can run small or big job. Located in New England, but interested in going anywhere, depending on size of job and salary. American, age 45. Married. Best of references as to experience and ability. PW-589, Textile World, 330 W. 42nd St., New York, N. Y.

HOSIERY MILL SUPERINTENDENT. Man 51 years of age with 37 years actual experience producing High Grade Seamless and Full Fashioned Hosiery, thoroughly familiar with all the equipment, materials, and modern methods used in the Successful Manufacture of Top Grade merchandise desires permanent connection with progressive concern. PW-623, Textile World, 330 W. 42nd St., New York, N. Y.

SUPERINTENDENT OF WEAVING 32 years of practical mill experience on Worsted, Cotton and Rayon Novelties, Sateens, Twills and Dobby Weaves Pick and Pick, expert loom man, graduated from Lowell Textile Institute at present employed as an executive but desire to make change. Confidential interview desired. PW-611, Textile World, 330 W. 42nd St., New York, N. Y.

BOSS DYER & CHEMIST—Twenty-five years laboratory and practical experience on Cotton, Rayon, Celeanese skeins, piece goods and mixed fibres, using all classes of dyes capable, efficient, good references. American, married, draft exempt, will go anywhere, available at once. PW-612, Textile World, 330 W. 42nd St., New York, N. Y.

MILL SUPERINTENDENT or Manager — Available for medium or large Southern mill. Manager or superintendent for past 20 years in yarn and weaving mills. Desires Similar opening in South. Highest references given. Have special ability in handling labor. PW-621, Textile World, 330 W. 42nd St., New York, N. Y.

WANTED

WANTED—We are interested in purchasing rubber thread which has been released for sale or use without restriction under War Production Board Order—124. Give particulars as to size, quantity, etc. W-613, Textile World, 330 W. 42nd St., New York, N. Y.

WANTED. Any type fabrics and yarns natural or dyed; regular production, closeouts or surplus stock. Any quantity. Cash. W-614, Textile World, 330 W. 42nd St., New York, N. Y.

WANTED, A MILL to do commission weaving on Acetate Yarns up to 200 looms; would consider renting or buying. W-615, Textile World, 330 W. 42nd St., New York, N. Y.

ANYTHING within reason that is wanted in the field served by Textile World can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

FOR RENT

DESIRABLE SPACE with modern humidifiers, low power cost for rent. Suitable for knitting or hosiery. Location East Tennessee, FR-616, Textile World, 520 N. Michigan Ave., Chicago, Ill.

WANTED

Mill with about 100–200 looms for weaving of rayons.
Send full details for quick action.

BO-622, Textile World
330 West 42 St., New York 18, N. Y.

WANTED

Manufacturer's agent or supply house covering textile mills in South Carolina, Georgia, Alabama, or any part thereof, to sell old established line of high quality bobbins. Please write to **RW-601**, Textile World, 330 West 42nd Street, New York City.

WANTED

Representatives calling regularly at Textile Mills. We have a highly specialized line—no War baby, but War AND peace-time proposition. No machines, but material continuously used and replaced securing continuous flow of repeat orders.

Give full outlines with references, also outline of present connections.

RW-603, Textile World
330 West 42nd St., New York, N. Y.

Piece Goods Wanted

COTTONS, RAYONS, ACETATES, KNITS, SPUNS—PILE GOODS — Large converters would like to contact mills or party able to secure quantities of above textiles—Cash basis, on profit sharing basis.

W-598, Textile World
330 W. 42nd St., New York City

FOR SALE

10,000 Flyer Roving Bobbins size 6" x 3½" in good used condition.

FS-599, Textile World
330 W. 42nd St., New York, N. Y.

FOR SALE
Three Hussong #2 skein yarn
DYEING MACHINES

together with air hoist, trolley and tracks. Located in Connecticut. For information, write

FS-595, Textile World
330 W. 42nd St., New York City

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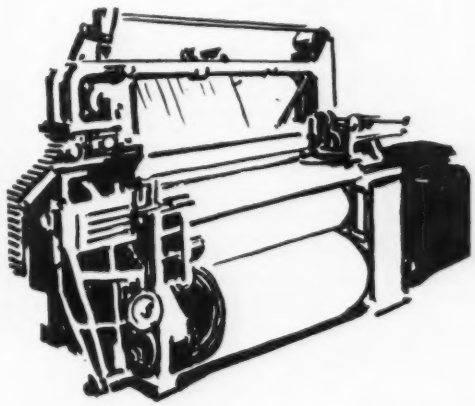
ANTICIPATE your needs and tell us TODAY what you expect to need urgently a week or, if possible, a month from now. Many mills throughout the industry are working with MLC on this basis. Telephone PEnnsylvania 6-8014.

Mill men, everywhere, in urgent need of critical mill machinery, equipment and mill supplies, telephone us their requirements, with the confidence that comes from years of satisfactory experience with FAST MLC service, and with MLC QUALITY USED machinery—"proved" on the production line.

We can ship at once any of the equipment listed below. This is only a partial listing.



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CRITICAL PRODUCTION EQUIPMENT

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Available for Immediate Shipment

—Button Breakers, 2-46", 1-52"
—Sets Whitin Combers, including:
2—Whitin Ribbon Lappers
2—Whitin Sliver Lappers
16—Whitin Model C Combers
—36" Windle Doubler & Winder
—48" Windle Doubler & Winder
—66" Voelker Double Bed Cloth Press
—set of 23 Lincoln 23" diameter by 88" face Copper Dry Cans
—500 lb. Bleaching & Dyeing Kier
—28 stick Klauder Weldon Monel Lined Non-Hoist Skein Dyeing Machine, motor driven, with Monel Poles
—28" American Copper Basket belt dr. Extractor
—48" Tolhurst Copper Basket Belt Driven Extractor
—Elliot & Hall Power Folding Machines, 1-40", 4-46"
2—Schultz Fulling Mills
2—Inspecting & Winding Mach. 1-54", 1-64"
10—50" Draper Automatic Magazine Worsted Looms, 6 harness, with warp stopmotions, belt driven
25—76" C. & K. 4 x 4, 25 harness heavy Worsted Looms
11—82" Crompton & Knowles 4 x 4 Box Woolen Looms, 25 harness, friction dr.
1—52" Waldron 12 color Printing Machine
1—Pair 60" x 8" Squeeze Rolls
2—60" P. & W. Edge Stenciling & Winders
1— 72" 2 Blade Shear
1—106" 2 Blade Shear
3—80 spindle Hopedale Band Twisters, 4½" Rings, 5½" Gauge, Belt Driven
3—104 spindle Hopedale Band Twisters, 4½" Rings, 5½" Gauge, Belt Driven
1—60" James Smith 2-cyl. Shoddy Card Set. Including Bramwell Feed
1—66" Roy Floor Type Card Grinder

MISCELLANEOUS SUPPLIES

Quantity of Burr Pickers
352 Brass Tenter Clips
300,000 7½" Automatic Filling Bobbins
1200 Jack Spools 32½" between Heads

MACHINERY LIQUIDATING COMPANY

OPA REGISTRATION NUMBER 789

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1—Spencer Oiler
1—D. & F. Auto. Duster
2—Sargent Cone Dusters
1—Single Cyl. Hunter 20x60 Garnett
1—Double Cyl. P. & S. 20x60 Garnett
2—Whitin Model "C" Wool Spinning Frames
2—60" Harwood Card Feeders
2—18" x 30" P. & S. Ceiling Condensers

WINDING AND WEAVING

1—L. & G. Cop Winder
20—C. & K. 4 x 4 Box 25 harness Looms 82" & 92" #50, #90, #180 Universal Winders, "Rebuilt"
1—140" C. & K. Heavy Duty Loom

DYEING AND FINISHING

1—76" 2 burner C. & M. Gas Singer
1—Voelker Dewing Machine
1—Gessner Heavy Duty Press
1—78" C. & M. Steamer and Brush
1—2 Truck Yarn Dryer
2—42" Tolhurst Extractors Monel & Copper Baskets
1—48" Tolhurst Extractor Copper Basket
1—60" Tolhurst Extractor Copper Basket
1—66" Hunter Padder
1—Set of 6 Copper Dry Cans, 48"
1—E. & H. 66" wide Folder
1—66" Steiner Dewing Machine
2—R. Hunt Fulling Mills
3—80" Woonsocket D.A. Nappers
1—P. & W. 92" Napper
1—80" Voelker Double Bed Cloth Press

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25,000 Gal. Cap., 60 Ft. Tower.
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17—3000 Gal. & 6000 Gal. Cap.
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BEAM HEADS FOR SALE

20—Pr. Cast iron Worsted Loom Heads 22" dia., 6½" barrel
20—Pr. cast iron Worsted Loom Heads 22" dia., 5" barrel
9—Pr. cast iron Worsted Loom Heads 20" dia., 5" barrel
5—Pr. cast iron Worsted Loom Heads 20" dia., 6½" barrel
200—Pr. cast iron Cotton Loom Heads—18"—no friction
50—Pr. cast iron Cotton Loom Heads—17"—no friction
200—Pr. cast iron Ratchet Friction Heads—13"x2"
38—Pr. Pressed Steel Heads 20"—5" barrel
27—Pr. cast iron Section Beam Heads—21½"-22"
36—Pr. Wooden Section Beam Heads—26"

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30" LOOMS

76—Draper 30" Model E used looms in good condition. Complete with Lacey top motions, pulleys, shafting, beams, etc. Located in South.

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10 East 40th St. New York, N. Y.

NORMAN M. McDOWELL

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REBUILT & USED BUY WITH CONFIDENCE MELROSE 5-1772-3

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CALENDERS 35" to 100" 2 to 6 Bowls various types.
DRY CANS 17—50x23, 16—75x30, 5—96x23.
DOUBLERS 60" goods, clock and attachments.
DRYERS, Package, 4 trays, Temp. Controls.
DYER, Skein 46" Horizontal Roller Chain.
DRYER, Pin Tenter 72" Goods..
EXTRACTORS 28" to 40" Mtr. & Belt drives.
FINISHING MACHINE 2 cylinder 74x18 Crab roll.
FULLING MILL #10 Double Compartment.
GRINDER, Napper 80" rolls, automatic tripping.
INSPECTING & ROLLING UP Machine 66" 2 roll Batcher.
NAPPERS, D.A. & S.A. WOOLEN, KNIT-GOODS, COTTON, 66" to 96" 14 to 36 rolls.
MANGLES & SQUEEZE SETS 40" to 66", 2 & 3 roll Units.
ROTARY STEAM PRESSES 66" Double Bed Units.
SHEARS, 1 to 4 Blade units 40" to 88" widths.
SEWING MACHINES, Railway type 50" to 75" widths.
TENTER FRAMES 30' to 70' long, 40" to 100" wide, Pin and Clamp Style.
WASHERS, OPEN WIDTH, 4 sets of NIP ROLLS, MONEL METAL Idler & Immersion rolls.
VACUUM EXTRACTOR 72" pump & motors complete.

CARDING, SPINNING & WEAVING

3 Cylinder WOOLEN CARDS 48x48.
MULES, 288 to 360 Spindles 2" to 2¼" Gauge.
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INTERMEDIATES 9x4½, 84 to 114 Spindles.
LOOMS, Draper "E" 35½" & 43½" Reed Space, REMODELED.
LOOMS, Draper "D" 49½" Reed Space, REMODELED.
LOOMS C&K 76" to 92" 4x4 box.
SLUBBERS 12x6, 60 to 74 Spindle units.
SPOOLERS, 40" Jackspools, clocks, stands etc..
TWISTERS 216 Spindle 3" Gauge, Tape Driven.

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BRISTLE BRUSHES, EXPANDER ROLLS, RUBBER ROLLS, COLLAPSIBLE IRON CREELS.

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1—9 Roll Hydraulic Calender 42" wide
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1—set-Palmer, Frame & Quetch for 60" goods
1—40' Textile Tenter 102" width
1—60" Extractor—Broadbent—Beltdrive
1—45" 2 Roll Hydraulic Calender with Pump & Accumulator
1—6 Box continuous Soaper 22" wide—complete with Motor
1—6 Bowl Jumbo Calender—chasing—continuous Production
1—47" W & P Doubler & Roller (Chinaman)

TEL. DEXTER 9650 15-17 ORMSBEE AVE.

PROVIDENCE, R. I.

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1 48" Tolhurst Extractor, copper basket, underneath belt drive.
1 Garnet Shredder 42" face on rolls, table feed.
1 Kitson Card & Picker Waste Machine.
1 Rodney Hunt Sample Fulling Mill.
2 Paper Balers 20x18x45, all steel, hand operated.
1 38" Padder 2 rubber rolls.

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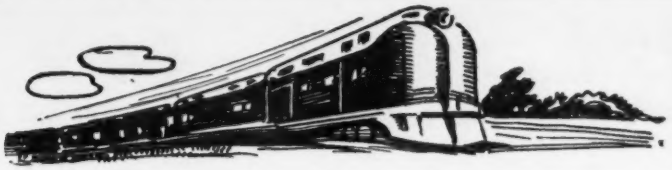

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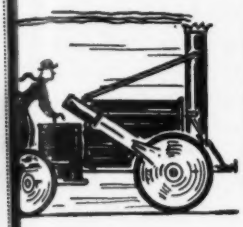

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PRINTING MACHINES

Rice, Barton & Fales 3 to 8 color Print Machines, 40" to 64" wide, with color pans, mandrels, star & furnisher gears, etc.

CALENDERS

V.V. B.V. Calenders, 50".
Morrison B.B. Calenders, 50" & 60".
Morrison 3-roll B.B. Calender, 64".
" Embossing Calender.
V.V. 46" Calender.

PALMER QUETCHES

Morrison & V. V. 60" & 72" Palmer Quetch Units.

AGER

' x 60" Ager.

KETTLES

Textile Copper Steam Jacketed Color Kettle, tilting type, agitated, 30 to 200 gallons capacity.

DRYERS

National Loop Dryers, 28', 33', 65' lg.
P & X Airlay Dryers.
V.V. 50" & 66", 5 & 7-Tier Dryer, fin heaters.
Phila. Dry. Mach. Co. Hurricane Continuous Skein Dryer.
Frank Bailey Truck Dryers with extra trucks for skein & tube yarns.

PRINT PADDER

-Roll Print Padder, dry tower with unit heater.

DYE JIGS

Battery 4—Butterworth stainless steel lined Dye Jiggs, 45".
Butterworth 60" stainless steel lined dye jiggs.

CAN DRYERS

-Dry Cans, 50" to 108" face, 23" to 84" dia.

SCOURING & DYEING MACHINES

Margent 3-Bowl skein Scouring Machine.
K-W Skein Dye. Machines, 20 to 30 sticks, mist type.
Obermaier 400# Vertical Package Yarn Dye. Machine, with wash-off kettle and two motor driven centrifugal pumps.

An IDLE Usable MACHINE may mean **DEAD AMERICAN SOLDIERS**

Let us put your idle machines to work. Send in your list now!

For Immediate Disposal we offer the following excellent equipment from the former plant of the Arcadia Knitting Mills, Allentown, Penna.

1—National 70' Loop Dryer, double line.
2—Single Line Fulling Mills, rubber rolls.
1—Single Truck Dryer.
8—D & F. & Woonsocket Nappers, 60" to 90".
2—Single Roll Nappers or Brushing Machines.
3—Steaming Machines for Tubular Goods.
2—C & M. Finishing Machines for tubular goods.
4—Shears, some equipped with pattern devices.
1—2-Roll Quetch, 36".
1—36" 2-Roll Hot Roll Calendar.
2—Examining Machines for tubular goods.
1—Grand Rapids Folder.
1—Skein Reeler.
1—Universal #50 Tuber.
4—Stainless Steel Monitor Exhaust Fans, 11,000 CFM.
1—Gas Boiler.

TENTER FRAMES

2—W & J, 50' Frames with Morrison stainless steel clips, 44" & 54" wide.
3—V. V. & W. & J. 60' & 60' Frames.

FULLING MILLS

6—Rodney-Hunt Fulling Mills, gear drive.

DOUBLERS

3—P & W, 46" & 66" doubling, reeling & Measuring machines.

FLAT FOLDERS

6—Elliot & Hall Flat Folders, 42" to 60" wide.

OPEN WASHERS

1—Continuous Full Width Washer, consistting of 10 sections, 4 nips each section, 66".
1—60" Continuous Boil-off Machine, steel tanks.

ROPE SOAPERS

2—Rodney Hunt 10' Rope Soapers.
1—V. V. Continuous square formation Washer.

SHEARS

3—Parks & Woolson double blade Shears, 66" with list saving device.
1—Parks & Woolson 3-blade Shear, 60½" with list saving device.

BLEACHING

8—Bleaching 4-5 ton Kiers, vomit type.
1—5-ton Kier, circulating type, pump and motor.
2—Lincoln 2-roll chemical squeeze rolls.
2—Arlington Rope Squeezers, with clutch pulley drive.

BEAMERS—BATCHERS

4—V. V. 50" & 55" Beamers.

DECATERS

2—David Gessner & Parks & Woolson 72" & 48" wide, complete with Nash Pumps.

DYE BECKS

29—Dye Becks, Morrison, V. V. and General, 3' to 8', stainless steel and wood boxes.

EXTRACTORS

3—V. V. & Tolhurst 60" Rubber Lined and Copper Basket Extractors.
1—50" Copper Basket Extractor, underdriven centrifugal machine.
1—Tolhurst 48" Underslung Open Top Extractor, copper basket.
10—Burkhardt, V. V. Fletcher, Tolhurst & Haring & Stephens, 48"; copper baskets.
4—Tolhurst & V. V. 40" to 44"; copper lined baskets.
1—King & Gerber 42" Extractor, copper basket.
11—Tolhurst, American Laundry, Adams, Troy and Bach, copper lined Extractors, self balancing, 17", 20", 26", 28", 32" and 40".

WORSTED SPINNING FRAMES

25—Ring Spinning Frames, 160 spindles each, 3½" pitch, 8" traverse, 1¾" ring, 4" front roll.

BUTTON BREAKERS

2—Textile & V. V. Button Breakers, 60" & 72" brass rolls.

MERCERIZING RANGE

1—Complete Mercerizing Range.

PADDERS, MANGLES, QUETCHES

4—Textile 50" 2-Roll Dye Padders.
7—Butterworth 50" 2-Roll Starch mangles.
2—Textile 80" 2-Roll mangles.
8—Butterworth & Morrison 2 & 3-Roll Quetches, 50", 60" & 72" wide.

WATER SOFTENERS

1—Permutit Water Softener, 103" hg, 63" wd, cleanout 13" x 17".
2—10 x 10 vertical softeners, zeolite piping, valves, meters and fittings.
2—Pressure sand filters, 8' dia., by 20' long, complete with pipe connections, valves and fittings.

SINGEING MACHINES

1—80" 2-Burner Singeing Machine.

VACUUM PUMPS

2—#3 Nash Pumps.
1—#2 Nash Pump.
1—L5 Nash Pump with double line Extractor.
1—Logemann All Steel Paper Baler.
1—Schick All Steel Press.

MISCELLANEOUS

Scutchers, Expanders, Sewing Machines, Trucks Generator Sets, Air Receivers, Rubber Lined Tanks, Modine Heaters, Motors, Exhaust Fans, Pleaters, Mandrels, Doctor Blades, Gears, Lathes, Portable Agitators, Accumulators, Wood Shells, etc.

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Quantity NEW 12"x36" VULCANIZED FIBRE ROVING CANS. Available for prompt shipment.

1—UNIVERSAL # 40 CONER, 100 spindles, equipped with late type electric head; motor driven; arranged to wind on wooden cones. Excellent condition.

A. F. FYANS
Textile Machinery
P. O. Box 454 Fall River, Mass.

FOR SALE

1—Premier 10" Colloid Mill, paste type, with 20 HP 3/60/220 volt motor
2—Tolhurst 60" Extractors, self-balancing
3—40" and 48" Tolhurst Extractors, center clung

WANTED FOR CASH

Extractors, Nash Vacuum Pumps, Centrifugal Pumps, Colloid Mills, Evaporators, Filters, Pans, etc.

BRILL Equipment Corp.
183 VARICK STREET NEW YORK

FOR SALE

Foster No. 75 Winder—48 Sp. complete with 2 motors 3/60/220 v. Excellent shape. Skein to cone.

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FOR SALE

BUTTERWORTH CALENDER

7 ROLLS—80" FACE

3 Composition Rolls, 4 Steel Rolls, Hydraulic lift —water-cooled journals. Located in South.

AMES BAG CO.
10 EAST 40TH ST. NEW YORK CITY

15—2600 hook **Crompton & Knowles** double lift jacquard machines. Approx. 10 years old and practically as good as new, have been run very little.

ALBERT J. BARTSON, INC.
314 East 6th St. Charlotte, N. C.

FOR SALE

WOOL MIXING PICKER

48" Davis & Furber (1940) equipped with 12 Bar Cylinder and 4 Feed-rolls, and Steel-plate 35" Wool Exhaust Blower.

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FOR SALE

PIN FRAME

111 feet long, width adjustable up to 255 inches. Can be operated by motor as well as by hand. Complete with overhead paddle fans.

NATIVE LACE WORKS, INC.
HIGHTSTOWN, N. J.

FOR SALE

Machine complete with 4 rubber covered rolls, 3 stainless steel idler rolls, reducer, 5 HP motor, steel tank and other parts. Never used. Will sell as a unit.

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Madison, Ohio

FOR SALE

Excellent Equipment, out of stock, here in N. Y. City

1—Haskell Dawes 4 ply Rope Machine.
2—Haskell Dawes 12"x14" Two spindle Formers.
6—Haskell Dawes 8"x10" Two spindle Formers.
1—12 spindle 5"x7" Twister.
10—20 spindle Ball winders. 5" Gauge. Silver Gay makes.
4—12 spindle Ball winders. 8" Gauge. Franklin makes.
1—378 spindle Whitin quiller.
2—Foster make, 40 spindle Tube winders, 6" Tubes.
4—Luther Thread Dressers. 98 spindle spool take offs.
75—Triple decker, Compound Wire Braiders. 16x16x24s etc.
10—Flat Kniting machines, for making Camouflage Nets, Fringes, etc; 36" width needle gauge.
8—90 and 100" Rachelle Knitting machines, for making Camouflage nettings.
90—16 carrier Textile Round Tubular Braiding machines, for making Parachute Cords for Government work. Ninety heads.
750—Flat and round Braiding machines, for government work, of all types.

We will consider trading any of the above machines for yarns, various sizes, colors, etc.

4—16 carrier #4 Butt Braiding machines.
1—8 spindle Brownell Flyer Twister, Gear Driven.

WHAT DO YOU HAVE FOR SALE? SEND US YOUR LISTS.
ALL OF THE ABOVE EQUIPMENT IS LOCATED ON OUR FLOOR.

ROBERT SOLOMON & CO., INC.

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Spring 7-2621

WANTED

WANTED

LOOMS

To Purchase about 100 Draper Automatic looms. Prefer a loom that has been running on rayons. State full particulars as to width of cloth, etc.

Address **W-602**, Textile World,
330 W. 42nd Street, New York City

WANTED

8x10 Haskell Dawes 2 spindle Formers.
12x14 Haskell Dawes 2 spindle Formers.
5x10 Haskell Dawes 6 spindle Formers.
5x7 Haskell Dawes 12 spindle Formers.

Advise condition, location, and price

W-575, Textile World
330 West 42nd St., New York City

WANTED

Several Sets of Wide Cans

W-604, Textile World
330 W. 42nd St., New York City

WANT TO BUY TANKS

3—50,000 to 100,000 Gal. Cap. Elevated Steel Water Tanks on Towers
3—500 to 1000 GPM Fire Pumps

RUSSELL STANHOPE
60 East 42nd St. New York, N. Y.

WANTED

Your Obsolete Sewing Threads

Send samples and quantities for quick disposal.

W-606, Textile World
330 W. 42nd St., New York, N. Y.

WANTED

600 to 650 Cone Creel
also
Rubber covering machine, any condition.

ARROW ELASTIC COMPANY, INC.
48 Hampden Street Springfield, Mass.

WANTED

Medium size box dye house and finishing equipment with or without jigs for synthetic fabrics. Include price and complete list of equipment in reply.

Write **W-620**, Textile World
330 W. 42nd St., New York, 18, N. Y.

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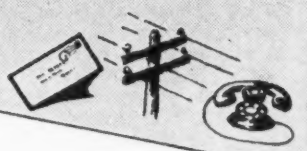

FINISHING

1—Werner 48″ Single Color Print Machine.
1—Rice, Barton & Fales 10-Color Print Machine.
1—Textile 8-Can Dryer, 23″ x 60″ Vertical Stack.
1—Butterworth 7-Can Dryer, 23″ x 80″, Horizontal.
1—Textile 26-Can Dryer, Copper, 23″ x 45″ Vertical.
1—54″ King & Gerber Continuous Boil-Off Machine, with Rubber Nip Rolls and Slat Convevor.
1—King & Gerber 65″ 3-Roll Finishing Calender.
1—Textile 72″ Full Width Open Soaper, with 2 Sets of Rubber Nip Rolls.
8—Stainless Steel Lined Sample Dye Becks.
1—4′ Stainless Steel Lined Dye Beck.
1—19′ Dye Beck.
3—Inclined Examining Machines.
1—48″ Tolhurst Basket Extractor.
4—Hercules 60″ Rubber Basket Extractors, Motor Driven.
1—Atlas Fade-O-Meter.
2—72″ Butterworth Dye Jiggs.
6—Copper Steam Jacketed Mixing Kettles, 50 to 200 Gallons Capacity.
2—1000 Gallon Steel Soap Kettles.
3—Van Vlaanderen 2 and 3 Roll Quetches, 50″ to 60″ Face.
1—Birch Bros. Coronation Portable Sewing Machines.
1—Windsor & Jerauld 50″ Tenter Frame, 30′ Long.
1—65″ Van Vlaanderen Palmer Tenter Quetsch Unit with 65″ 2-Roll Quetsch and 30′ Windsor & Jerauld Frame, Stainless Steel Clips.
1—40′ Van Vlaanderen Tenter Frame, 40′ long, 50″ wide, equipped with Stainless Steel Clips, Cooler Cylinder, Reeves Drive, AC Motor.
1—Werner High Speed Tuber, 50″ face with ½ yard Measuring Drum, 1½ H.P. 1800 R.P.M. 550 Volt, 3 Phase, 60 Cycles.
1—Textile Dye Padder, 45″ width, Bottom Roll Brass, Top Roll Rubber, Complete with Motor Drive, 10 H.P. 220 Volt, 3 Phase, 60 Cycle.
1—Eastwood Raw Goods Flopper, 60″ width, complete with 1½ H.P. Motor.
1—Parks and Woolson Semi-Decating Machine, 50″ face with Blanket, Nash Vacuum Pump and Motor.
2—Three Roll Van Vlaanderen Embossing Machines, 13″ face, top and bottom roll gas heated, pulley driven, hand set.
2—Textile Two Roll Embossing Calenders, 12″ face, one roll gas heated, pulley driven, complete with table and winder.
1—Textile Continuous Open Washer & Dryer, Cast Iron Tank, 9′ long x 20″ wide x 34″ deep, separated into three compartments, 3 sets Nip Rolls 17″ face, 6 Brass Idle Rolls, 9 Brass Immersion Rolls, 3 in each compartment, pulley driven; with One set Eight Horizontal Copper Dry Cans, 16″ face x 24″ diameter, 2 stack, pulley drive complete with take up.
4—Textile Finishing Machines, each consisting of 2 Roll Quetsch, 1 Rubber and 1 Brass, 16″ face x 6″ diameter, Hand Set, with one set 3 Horizontal Copper Dry Cans. Dimensions of Cans 20″ face x 21″ diameter, pulley driven, with 1 Let Off Stand.
1—Set of 2 Horizontal Dry Cans, 16″ face x 22″ diameter.
1—60″, 18′ Ager.
3—Sirostrom Clo'h Conditioners, 1 new, 2 used.
3—Van Vlaanderen Button Breakers 50″ Brass Rolls.
1—20 stick Collins Dye Machine.
1—Whitin Tape Condenser.
5—Parks & Woolson & Gessner Decating Machines.
6—Doubling & Winding Machines.
3—Hunter #10 Fulling Mills.
2—Inspecting Machines, 1 Curtis & Marble, 1 Parks & Woolson.
1—Franklin Process Kier.
1—Davis & Furher Picker.

SPECIAL

Perkins 100 Ton Roller Bearing Hydraulic Calender with motors, Hydraulic Pump, Accumulator, Spare Calender Bowls.

1—20 can Dryer 23″ x 54″.
5—Nappers, 3—20 roll 80″ 1—24 roll 84″, 1—36 Roll 84″.
3—Padders 54″ to 60″.
1—90″ Quilting Machine.
1—3 Bowl 36″ Yarn Scouring Unit.
2—Butterworth Scutchers.
1—Parks & Woolson 66″ Single Shearing Machine.
6—Slashers.
13—Tenter Frames 60-90′.

FILTER PRESSES

1—Sweetland No. 4 Pressure Filter with Stainless Steel Screens.
1—Smith & Vale, 32″ x 32″ 42 Plate Filter Press, Open Delivery, 1½″ Cake.

COLOR GRINDERS

1—Patterson 7′ x 5′6″ Silex Lined Pebble Mill, Gear on Head, Belted to 10 H.P., A.C. Motor.
1—Abbe 4′ x 6′ Porcelain Lined Pebble Mill, Texrope Drive for 5 H.P., A.C. Motor.
2—Patterson 4′ x 5′ Silex Lined Pebble Mills, Belted to 5 H.P. Motors.

SPINNING

1—Howard & Bullough Bale Breaker, 1926 model, 12′ extended apron Automatic Feed Regulator, Motor drive.
1—Howard & Bullough 1926 Model Vertical Opener with Hopper Feeders and #7 Openers, Motor Driven.
24—Howard & Bullough Spinning Frames, 3″ Gauge, 228 Spindles each, 1⅞″ #1 Flange Rings in Cast Iron Holders, Separators, Band Drive.

KNITTING MACHINES

160—Nye & Tredicks Range 10 inch 10 cut 8 feed to 23 inch 14 cut 12 feed.
1—Scott & Williams Tubular latch Needle Knitting machine 20″ 16 Feed 14 Cut.
2—Copper Cuff Knitters 23 inch 6 feed 14 Cut.

MOTORS

200—A.C. electric from ¼ to 75 H.P.

TANKS

2—Asbestos Insulated Round Steel Tanks, 6′ Diameter x 6′ Deep with open Steam Heating Pipe.
1—Steel Tank, Open Top, Side Bottom Outlet, 9′ diameter x 4½′ Deep.
7—8,000 Gallon Closed Steel Pressure Tanks, ⅝″ Plate, 8′ x 20′ Long, Dished Ends, Riveted.
5—Rubber Covered Open Steel Tanks, 4′ Wide, 3′ Deep, 6′ Long.

BLEACH HOUSE EQUIPMENT

1—Steel Kier 8′ dia. 9′.
1—Kier Loader Morrison.
3—Union Centrifugal Pumps 3″ x 2″ 5 H.P.
1—Gould Centrifugal Pump 5 H.P.
1—Fairbanks Morse Pump 3″—10 H.P.
1—Rodney Hunt Dye Machine 7′6″ wide.

SPECIAL:—AUTOMATIC LOOMS

34—Draper Automatic Bobbin Changing Dobby Looms, Modified "D", 20 Harness Single Index Dobby, 69½″ Reed Space, Midget Feelers 4 Bank Sliding Bar Step Motion, Stafford Thread Cutters, Friction Let-Off, Worm Take-Up, Single Filling Fork, Motor Driven by ½ H.P. G.E. 550 Volt Motor.

SEWING MACHINES

Union Special
25—52800
50—35300
11—9900
3—15400

Metropolitan
4—192-5 elastic machines with elastic pullers.

Union Buttons
10—Button Sewers
10—Button Sewers used as Tackers

Wilcox & Gibbs
5 lock stitch

Singers
112 W 140

FOLDING ROOM EQUIPMENT

2—Grand Rapids Textile Co. #1-2 folders for goods up to 28 inches wide.
2—Grand Rapids Textile Co. tubular cloth turning machines with brass turning pipe, 5″ diam. by 13 ft. lg. with stand, rolls and countershaft.
30—Steam flatirons, units.
1—Conveyor, 100 ft. long.
2—Automatic steam pressing.

KETTLES

6—Copper Steam Jacketed Mixing Kettles, Equipped with Double Motion, Bronze Agitators, 70 to 250 Gallons Capacity.

MISCELLANEOUS

Water Softening Equipment, Water Filterers, Color Grinders, Filter Presses, Electric Trucks, Pumps, Tanks, General Plant Equipment.
15—Water Softeners.
4—Industrial Electric Trucks
2—Elwell Parker, 1—Yale, 1—Louis Sheppard.
150—Veeder Root Counters.

NAPPER

1—Davis and Furber 40 Roll Napper.

WATER SOFTENING AND FILTRATION EQUIPMENT

2—Permutit Water Softeners, 10′ Diameter x 16′ Long, with Interconnecting Piping, Valves, Meters and Large Quantity of Zeolite.
2—Permutit Vertical Water Softeners, 3′ Diameter, 6′ High, complete with Zeolite and Fittings.
2—Permutit Type C, Electric Chemical Feeding Devices, Constant Feed.
1—Permutit Vertical Water Softener, 5′ x 6′ with Valves, Piping and Zeolite.
7—Hungerford & Terry Horizontal Steel Pressure Water Filters, 8′ x 20′, 8,000 Gallons Capacity, ⅝″ Plate, equipped with Cross Piping, 8″ Valves and all accessories.
1—Filter Everson 42″ x 48″.
1—Filter Permutit 6′6″ x 6′.

SPECIAL

1—Tolhurst 48″ Copper Basket Underslung Open Top Centrifugal Extractor, Self-Balancing Type on Springs, Equipped with Vertical A.C. Motor. Latest Type. Excellent Condition.

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